

STATE OF CALIFORNIA - THE RESOURCES AGENCY
BEFORE THE
CALIFORNIA ENERGY COMMISSION (CEC)

In the matter of,)
) Docket No. 12-IEP-C
)
Preparation of the 2012)
Integrated Energy Policy Report)
<u>(2012 IEPR)</u>)

IEPR Lead Commissioner Workshop on
Electricity Infrastructure Issues
in California

Caltrans District 7 Building
100 South Main Street
Conference Rooms A,B,C
Los Angeles, California

Friday, June 22, 2012
9:30 A.M.

Reported by:
Troy Ray

COMMISSIONERS

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 Robert B. Weisenmiller, Chairperson

STAFF

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 Robert Ogelsby, Executive Director
 Michael Jaske, Electricity Analysis Office

Also Present (* Via WebEx)

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 Steve Berberich, California Independent System Operator
 Michel Florio, Commissioner, CPUC
 Catherine Sandoval, Commissioner, CPUC
 Neil Millar, California Independent System Operator
 Mike Tollstrup, Air Resources Board
 Mo Beshir, Los Angeles Department of Water and Power
 Nathaniel Skinner, CPUC
 David Vidaver, California Energy Commission
 James Newcomb
 Mathias Bell

Panelists

Leslie Starck, Senior Vice President, Southern California Edison
 James Avery, Senior Vice President, San Diego Gas & Electric Company
 John Geeseman, Legal Counsel, Alliance for Nuclear Responsibility
 V. John White, Executive Director, Center for Energy Efficiency and Renewable Technologies,
 Fran Inman, Senior Vice President, Majestic Realty Corporation
 Angela Johnson Meszaros, Law Offices of Angela Johnson Meszaros
 Jan Smutny-Jones, Executive Director, General Counsel, Independent Energy Producers Association

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Gary Headrick, San Clemente Green
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Chris Ellison, Pathfinder Zephyr
Jim Stewart, Sierra Club
Rob Longnecker, Clean Coalition
Rochelle Becker, Executive Director, Alliance for
Nuclear Responsibility
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1 P R O C E E D I N G S

2 JUNE 22, 2012 9:30 A.M.

3 MS. KOROSSEC: All right, good morning everyone,
4 welcome to today's workshop on Electricity
5 Infrastructure Issues in California.

6 I'm Suzanne Korosec and I oversee development
7 and preparation of the Energy Commission's biennial
8 Integrated Energy Policy Report.

9 Just a few housekeeping items before we get
10 started. Restrooms are located out the door, down the
11 hallway that you entered it. Men's is on the right,
12 women's is on the left.

13 There's a cafeteria located, if you go out the
14 main doors, past the security and to your left, for
15 snacks and things. And we've also provided a list of
16 restaurants within walking distance of the building for
17 lunch.

18 Depending on how the day's discussions go this
19 morning we plan to take lunch from around 12:15 to 1:30.

20 Today's workshop is being broadcast on the web
21 and it's also being transcribed, so parties need to be
22 aware that you are being recorded.

23 We'll make an audio recording available on our
24 website about a week after the workshop and a written
25 transcript will be posted on our website in about three

1 weeks.

2 Folks also need to know that one of our workshop
3 attendees, the Reliance for Nuclear Responsibility, will
4 be videotaping the remarks of their representatives.

5 We'll have two opportunities for oral public
6 comment today. One just before lunch, for those who are
7 unable to stay until the end of the day, and then one at
8 the end of the day.

9 For our in-person guests, if you wish to make
10 comments or ask questions, please fill out one of these
11 blue cards, they're on the table where the handouts
12 were, with your name and affiliation. And, also, let us
13 know if you have time constraints and need to speak in
14 the morning session, rather than the afternoon. And you
15 can give the cards to me at any time throughout the day.

16 To make sure everybody has an opportunity to
17 provide comments we ask that you keep comments to three
18 minutes, and just hit the high points and submit more
19 detailed written comments after the workshop.

20 We're accepting written comments on today's
21 topics and on a list of questions at the end of the
22 agenda until close of business July 13th.

23 And the notice for today's workshop, which is
24 available on the table out in the hallway and also on
25 our website, explains the process for submitting

1 comments to the IEPR docket.

2 For our participants who are listening on the
3 web, you can use either the "chat" or "raise hand"
4 functions to let our coordinator, Lynette Green, know
5 that you have a question or comment and will open your
6 line at the appropriate time.

7 For those of you participating by phone only,
8 we'll open the phone lines at the end of each public
9 comment period.

10 And with that, I'll turn it over to our
11 Commissioners and Agency heads for opening comments.

12 COMMISSIONER PETERMAN: Good morning, Suzanne,
13 thank you for that introduction.

14 Hello, everyone, I'm Carla Peterman, I am lead
15 Commissioner at the Energy Commission on the 2012 IEPR.

16 Thank you, first, to Caltrans for allowing us
17 the opportunity to hold this workshop in their building
18 here, in downtown L.A., it is good to meet together in a
19 different part of the State.

20 Today's IEPR workshop is on electricity
21 infrastructure issues in California. It is absolutely
22 vital that we have sufficient infrastructure to deliver
23 safe, reliable, and environmentally sustainable power to
24 California.

25 Numerous factors, such as plant closures,

1 extended outages, variable generation, and environmental
2 concerns, and local reliable needs can make this
3 challenging, delivering the safe infrastructure.

4 Today we're here to discuss some of these
5 challenges and solutions, and how we coordinate to move
6 forward.

7 The importance of this topic to the State and
8 the need to coordinate is evidenced by the dais you have
9 in front of you here today. We have California Energy
10 Commissioners, we have Public Utilities Commissioners,
11 we have representation from the California ISO, the ARB,
12 the City, the Air District.

13 This is an important issue to all of us and we
14 look forward to hearing from you, the experts, those on
15 the ground about what we need to do better going
16 forward.

17 With that, let me turn to the Energy Commission
18 Chairman, Chair Weisenmiller, for introductory comments,
19 as well as two others on the dais, we welcome their
20 comments as well.

21 COMMISSION CHAIR WEISENMILLER: Again, I'd like
22 to thank everyone for their participation today. I
23 think we appreciate the opportunity to come down and to
24 have conversation among the various technical experts on
25 these issues, but also to -- and certainly to listen to

1 the public comment.

2 L.A. is a very vibrant part, a key part of the
3 State infrastructure and at the same time it is one of
4 the more challenging areas as we go forward in the
5 transformation of our energy system.

6 It's challenging in the sense that you have an
7 aging infrastructure and, at the same time, very
8 challenging in environmental backdrop. Certainly, one
9 cannot find any place else in California that has as
10 much of a challenge dealing with air quality issues.

11 Certainly, as a State as a whole, working on the
12 climate change issues, which means greenhouse gas
13 issues, but at the same time, of course, there's the
14 once-through cooling issue.

15 So, there's a very -- you know, an environment
16 where we need to make our energy system more sustainable
17 but, at the same time, we have to be forecasting the
18 future and what our needs are.

19 And this is probably one of the most troubled,
20 difficult times in the 30 years that I've been doing
21 this to actually forecast what the future looks like.
22 We, obviously, are emerging from what's been a terrible
23 recession, downturn.

24 At the same time when we look at we're doing
25 very serious pushes on energy efficiency, on renewables

1 and on electric vehicles.

2 And so, basically, how all that's going to play
3 out is going to be very important to what's needed on
4 the energy system.

5 And I think just the backdrop, as we're
6 transforming the electricity system, we also have a
7 vision of transforming the transportation system. And
8 we're going to hear much more about that from the South
9 Coast today.

10 But, certainly, with that transformation that
11 has implications on the energy system. And where we're
12 working for and the reason why we're trying to pull the
13 State agencies here is to really look at how that
14 transformation of transportation can be complementary to
15 the electric system and the transformations we're doing
16 there.

17 But, again, I think we have to have a system
18 that is robust enough because surprises happen and,
19 frankly, none of us were really expecting, as we did
20 these long-term plans, that we'd be facing the situation
21 we are this summer with the unit at San Onofre.

22 So, again, we have a plan to deal with that,
23 certainly the ISO will talk about that but I guess the
24 basic message is that forecasting the future is very
25 difficult. And we plan to have contingency plans to

1 deal with the unexpected.

2 So, again, thanks for your participation, we're
3 looking forward to hearing your comments.

4 CPUC COMMISSIONER FLORIO: Yes, I'm Mike Florio,
5 Commissioner at the Public Utilities Commission, and the
6 lead Commissioner on our long-term procurement planning
7 proceeding that is going to be addressing many of the
8 issues that we're talking about today from the
9 perspective of necessary electricity procurement to keep
10 the lights on in Southern California.

11 As Bob said, we really have a Gordian knot of
12 issues here that bring in many different agencies. So,
13 I'm very much looking forward to some further education
14 on these issues, which we will be taking up in hearings
15 that are scheduled for, I believe, August of this year,
16 in San Francisco.

17 So, I'm really looking forward to the dialogue.
18 And we have a challenging set of issues but we can't
19 afford to fail, so one way or another we're going to
20 have to find our way through these challenges and find
21 the way forward for California and, particularly,
22 Southern California.

23 So, I'm very much looking forward to the day.

24 We will be joined this afternoon by my
25 colleague, Catherine Sandoval, who has another

1 engagement this morning. Commissioner Timothy Simon
2 also was hoping to attend and he sent a note that he
3 asked me to read.

4 "I regret that I will not be attending today's
5 Lead Commissioner Workshop on Electricity
6 Infrastructure Issues in California. I'm unable
7 to attend today's workshop because of certain
8 restrictions in the Bagley-Keene Open Meeting
9 Act that prohibit having more than two sitting
10 PUC Commissioners at attendance at a meeting.
11 I appreciate the invitation and wish you another
12 informative and successful workshop."

13 So, I'll be reporting back to Commissioner Simon
14 and the other PUC Commissioners on what happens here
15 today.

16 But it's wonderful to be in Los Angeles and I'm
17 looking forward to an informative day.

18 MR. BERBERICH: Sure, I'm Steve Berberich and
19 I'm the Chief Executive Officer of the California
20 Independent System Operator. And I'd like to express my
21 gratitude for inviting me here today, Commissioner
22 Peterman and Chairman Weisenmiller.

23 I think that the discussions we have today are
24 important and they're going to show the paramount need
25 for close cooperation across the agencies, as well as

1 across the State.

2 The ISO's been very concerned about many of the
3 infrastructure issues that we're going to talk about
4 here today for some time and it's important that we all
5 kind of bring them all together.

6 I think that Commissioner Florio correctly
7 called it a Gordian knot because we have restrictions in
8 our once-through cooling units. If we were to retire
9 every one of those once-through cooling units, I can
10 assure you that we would not have electricity in much of
11 Southern California.

12 We're going to have to figure out how to do that
13 while maintaining our reliable power.

14 Layer onto that air emission credit restrictions
15 that those same plants use.

16 And then, finally, we're embarking as a State on
17 a very aggressive, very interesting agenda to bring in
18 33-percent renewables onto the grid, which are higher
19 than most areas in the world. We have to do that while
20 we have these other issues pending.

21 And then, finally, this summer, you know, some
22 of the weaknesses we have in the infrastructure are laid
23 bare by San Onofre, 2,250 megawatts of power that's
24 likely to be unavailable, I'm certain will be
25 unavailable this summer, and it's uncertain in the near

1 future as well.

2 These are challenging issues. However, I do
3 think they provide us some opportunities and let me talk
4 about those for one moment.

5 As we go through and look through the once-
6 through cooling plants, and in particular in the south,
7 we know that we don't need all of them. So, we're going
8 to have to work together and figure out which ones we do
9 need.

10 When we do replace them, I think we can do them
11 in a, well, my phrase, I've coined, is "three for
12 fashion."

13 Currently, the once-through cooling plants are
14 generally about 40 years old and they're not as
15 efficient and effective as modern plants.

16 We can change those out for modern, less-fuel-
17 intensive, and less-emitting plants significantly, and
18 there are up to 40 percent reductions in emissions in a
19 newer plant versus an older one, so more efficient and a
20 lower-polluting plant.

21 Secondly, plants need to be able to be flexible
22 in the future. Now, we have plants that move relatively
23 slower and in the future we're going to have to have
24 them move very quickly.

25 I can give you an example of this. We see,

1 generally in the spring, with the amount of wind
2 generation available in the system, we see losses of up
3 to 800 megawatts, up to 1,000 megawatts in a half-hour.
4 That's a lot of energy and we have to replace that very
5 quickly with, generally, gas plants that can ramp
6 quickly. So, flexibility is an important attribute.

7 And then, finally, these plants are local
8 capacity areas. That means the plant has to be there,
9 there's no other way to bring power in through the
10 transmission grid.

11 We have options. We can switch them out for
12 things that are far more efficient and less polluting,
13 and we can also build transmission through it. And
14 transmission lines, particularly large transmission
15 lines, are not terribly favored, particularly if they go
16 through your backyard. So, we'll have to work through
17 that.

18 Now, we look like we're going to be successful
19 in mitigating the issues in San Onofre but we've had to
20 do some extraordinary things to make sure that happened.

21 And paramount to that is everyone needs to make
22 sure that we maintain a conservative posture this summer
23 and heed conservations alarms because it's going to be
24 very tight in the South L.A. Basin and in San Diego.

25 So, the contingency plans, I think, we have in

1 place have been very effective. I particularly would
2 like to thank the Commissioners at the PUC, and the CEC,
3 as well as the Air Resources Board, the South Coast Air
4 Quality District, and even EPA Region 9. All of them
5 came together to be able to bring back the Huntington
6 Beach 3 and 4 units.

7 It was a very difficult road and the
8 collaboration that we received across all these State
9 agencies, I think, has been unparalleled.

10 So, as I indicated, even with those
11 contingencies in place, loads are going to be quite
12 tight. These are temporary fixes.

13 San Onofre is 2,250 megawatts of power and
14 that's a lot of power that will be missing and, from a
15 long-term perspective, we're going to have to mitigate
16 that.

17 So let me tell you this, if we make it through
18 the summer without any kind of disruption, you know,
19 largely because we didn't have large heat spells, and
20 let's hope that we don't, and we don't have major
21 contingencies on the system, loss of major power plants
22 or transmission lines, because we get through the summer
23 doesn't mean we don't need San Onofre, or options or
24 alternatives to San Onofre.

25 I hope you'll hear today some of the issues that

1 are before us. And again, I note that deep
2 collaboration across the agencies will help us really
3 resolve these issues. Thank you.

4 MR. OGLESBY: Let me introduce myself, I'm Rob
5 Oglesby, I'm the Executive Director of the California
6 Energy Commission. And I'm batting clean-up after much
7 has been said about the challenges we face.

8 And so I think the best thing that I'd like to
9 observe at this point is how valuable this forum is and
10 how fortunate we are to have everyone come together, the
11 diversity of views.

12 I've had the opportunity to work in different
13 fields, other than energy, that overlap the issues that
14 we will deal with today and I'm glad to see that there's
15 a diversity that's reflected both on the agenda and the
16 participants.

17 And I think when you have the challenges that
18 were just described by all the panelists, it's important
19 to have communication between the agencies and the
20 constituencies. And this proceeding is important to
21 establish the coordination and the foundation for that
22 communication to deal with some of those issues.

23 So, I wanted to welcome you all here and thank
24 everyone for participating, as well.

25 MS. KOROSEC: All right, thank you. Before we

1 get into our presentations I just wanted to provide a
2 little bit of context for today's workshop.

3 Every two years, on odd-numbered years, the
4 Energy Commission prepares the Integrated Energy Policy
5 Report which summarizes the results of a wide variety of
6 analyses of energy issues, and provides policy
7 recommendations to the Governor.

8 The even-numbered years we issue an IEPR update
9 that follows up on issues that were raised in previous
10 IEPRs or addresses new issues that may have come up
11 since the latest IEPR was published.

12 We are in an update year this year. And the
13 2011 IEPR, which was published in December of 2011,
14 copies of which are available on the table out in the
15 hallway, highlighted the importance of long-term
16 infrastructure planning to make sure that California has
17 sufficient and reliable energy supplies, both to meet
18 future demand and to support California's energy goals.

19 I won't go into any of the detailed discussions
20 of the IEPR because I think all of our speakers so far
21 have covered that pretty well.

22 But in today's workshop we're going to hear
23 updates on the various infrastructure planning studies
24 that are being conducted by government agencies,
25 balancing authorities, and other interested

1 organizations.

2 And then we'll finish up with a panel of
3 representatives, of various areas, to get their
4 reactions to the day's discussions.

5 So, with that I'll now introduce Dr. Michael
6 Jaske, from the Energy Commission's Electricity Analysis
7 Office, who's going to provide an overview of the
8 infrastructure issues we'll be discussing throughout the
9 day.

10 DR. JASKE: Thank you, Suzanne. Welcome
11 everyone.

12 My role today is to give you some sense of how
13 the presentations that will follow fit together and to
14 identify some places to look forward to particular
15 presentations, if you're interested in more detail.

16 So, why are we here? I think that's been
17 covered sufficiently by the introductory remarks of our
18 agency leaders on the dais.

19 But one thing they haven't mentioned is that
20 some of the planning analyses that you're going to hear
21 today have never been implemented at the kind of ten-
22 year time horizon that we are now doing.

23 For example, Neil Millar will explain how local
24 capacity assessments help to identify what Mr. Berberich
25 said, that only a fraction of the existing capacity

1 needs to be replaced for that purpose.

2 We haven't had the benefit of that kind of ten-
3 year time horizon prior to the last round of
4 transmission planning analysis that the ISO conducted.

5 Certainly, there is a great deal of uncertainty,
6 perhaps more of it, or perhaps we're just better
7 acquainted with the uncertainty that's been there all
8 along.

9 And one thing that I guess I should try to
10 emphasize, and I will cover this at some more depth
11 later, is that we have many agencies that have pieces of
12 the authority necessary to resolve these decisions and
13 move forward, but no one agency has all of the authority
14 that it needs. So, cooperation, collaboration is
15 essential.

16 We have ongoing forums, such as the Energy
17 Commission's IEPR, the ISO's transmission planning
18 process, or the PUC's LTPP. And we have more one-off
19 studies or special purpose efforts, such as ARB's
20 Assembly Bill AB 1318.

21 There are many things that are driving the
22 results that we're going to be looking at today or other
23 analyses like these that will be done in the future.

24 Certainly, load growth continues, albeit at
25 lesser levels than have been the case in the past,

1 partly because of reduced expectations of economic
2 activity, but partly as a result of the amount of energy
3 efficiency that has been invested in our customer's end
4 uses over the years.

5 We have a once-through cooling policy,
6 obviously, that is a critical driver of the retirement
7 of many of the OTC facilities. And we have the
8 fortunate outcome of previous efforts to collaborate
9 among the agencies where the schedule for compliance for
10 each of these facilities is somewhat flexible in that
11 when, and if, infrastructure issues create a challenge
12 for the existing compliance they -- the State Water
13 Resource Control Board will explicitly consider the
14 input from these agencies in adjusting that date.
15 They're cognizant of the potential for their retirement
16 schedule to create reliability problems and they are
17 prepared to make adjustments, if necessary.

18 We have the 33-percent renewable requirement
19 that's now in law, but we also have the goal, that
20 Governor Brown has been pushing, of a large portion of
21 that being attributed to generation. And we're working
22 through the challenges of understanding where that would
23 be located, what kind of technology will it actually be,
24 how will it perform, how does that interact with the
25 balance of our system.

1 And then we have adjustments to the load side
2 for energy efficiency, maybe to some extent also demand
3 response. A lot of demand response going more to supply
4 resource to be called upon as needed.

5 We have a bunch of standards and other things
6 guiding our assessments, that we'll need to focus on
7 standards here.

8 Reliability, in various and sundry
9 manifestations have I called out here, FERC and NERC
10 national standards, WECC standards for Western Region.
11 Traditional ways of looking at things like a 15 percent
12 planning margin, local capacity requirements that Mr.
13 Berberich mentioned earlier, that come about because of
14 the limitations of the existing transmission system and
15 the difficulty of upgrading that system to eliminate
16 those, the need for some kind of, and some amount of
17 local generation facility.

18 And, of course, flexible resources, not yet
19 really a standard or a requirement, but the ISO clearly
20 moving us in the direction of trying to understand the
21 degree to which we do need to have sufficient amounts of
22 those kinds of resources to integrate renewable.

23 Then attainment, Southern California, at least
24 in the South Coast air shed, is not yet in attainment
25 for certain criteria pollutants and so we're striving to

1 get there. And we need to take that into account in
2 both the assessments we conduct, the options that are
3 made available and the decisions that are made.

4 We also, of course, need to be concerned with
5 public health and safety. Fukushima increased awareness
6 of not only the risk of nuclear power plants, but the
7 risk to nuclear power plants. Tremendous difficulties
8 in Japan from the shutdown of the vast majority of their
9 nuclear plants, you know, as they are concerned about
10 safety.

11 Federal initiatives are reducing the future
12 availability of coal plants through mercury and toxic
13 standards that have been issued by the US EPA, as well
14 as California's own mandates, like SB 1368, that
15 prohibit long-term contracting with such facilities.

16 And, finally, a dimension that's critical to the
17 actions that the CPUC takes is the ratepayer protection
18 perspective, the limitation on what ratepayers can
19 afford to pay.

20 And the issue of the business sector needing to
21 be competitive with other locations throughout our
22 country and the world, where there are different
23 priorities for environmental concerns, especially.

24 One of the things you're going to hear more
25 about today in the course of the various presentations

1 is the degree to which the agencies are coordinating.
2 At the level of the technical staff there is a
3 considerable degree of coordination, a few of the
4 specifics called out here on this slide.

5 The use of Energy Commission forecasts by the
6 PUC and the ISO in their assessments. As I mentioned
7 earlier, the collaboration among the energy agencies, as
8 well as the Water Board, on implementation of OTC and
9 the effort that will be described later this morning on
10 AB 1318.

11 This is a collaboration at this point that is
12 focused largely on the preparation of studies and
13 communicating the results of these studies. We are just
14 now getting to the stage where the rubber is going to
15 meet the road on making decisions that come out of these
16 analytic efforts, and how that can happen in a
17 coordinated manner is actually one of the challenges
18 that we face.

19 So, what are these studies? The ISO has
20 conducted, as it does now on an annual basis, extensive
21 analyses at the 10-year time horizon for certain of the
22 policy dimensions that are important, renewable,
23 alternative futures, using load forecasts and other
24 inputs from the PUC and the Energy Commissions.

25 The studies that the ISO has made this spring,

1 looking at the consequences of the outage of both San
2 Onofre units, analyses that the ISO and the LADWP have
3 done for ARB to implement AB 1318 study. You'll hear
4 more about all of these by presenters that follow me.

5 There are others still in the pipeline.
6 Although many of the core pieces of the AB 1318 effort
7 are just winding up, bringing all of those pieces
8 together in an integrated fashion, determining what they
9 all mean, preparing a draft report, getting out there
10 into the public for review is still to come.

11 The ISO is going to study nuclear replacement
12 more thoroughly than it has. And looking forward, out
13 to further time horizons than just the 2012 year and
14 2013 year that have been examined to date.

15 And depending on how those analyses turn out
16 there may need to be just a general update of the OTC
17 replacement issue for all the plants.

18 The Energy Commission staff will make a
19 presentation, later today, that focuses on some of the
20 consequences of this uncertainty that we're all aware
21 exists, but the way of trying to quantify the range of
22 that on the need for infrastructure.

23 And since we are in a biennial planning process,
24 as Commissioner Peterman mentioned, the next cycle of
25 analysis, which is just now beginning for

1 the -- and will be revealed in the 2013 IEPR effort, is
2 certainly going to be looking at the impact of demand
3 forecasts of electrification.

4 And we'll hear from Mr. Wallerstein, of the
5 South Coast District, about some of their ideas of where
6 electrification of vehicles and other processes will
7 take us.

8 So far I've mentioned a lot about analyses and
9 are we just talking the talk or are we going to walk the
10 walk?

11 Well, there are some forum for action here, even
12 in the near term, making use of the kind of analyses and
13 results that exist today.

14 And as Commissioner Florio mentioned, although
15 information may be imperfect and incomplete there is a
16 necessity to make some decisions to take action today.
17 And we'll hear from a representative of the PUC staff
18 about what the 2012 LTPP intends to accomplish both this
19 year and the next phase, next year.

20 The ISO's annual transmission planning process,
21 in particular the cycle that's now underway, the '12-'13
22 edition of that, will provide a basis for the ISO
23 actually taking action on transmission upgrades for
24 which its approval is sufficient authority to proceed or
25 for anything that's found necessary, that's at the

1 larger scale, that needs a CPCN from the PUC, then we
2 can get that process started.

3 And the Energy Commission will, in addition to
4 its analytic efforts, continue to be reviewing
5 applications for certification that come to us by power
6 plant developers.

7 There are three power plants now under
8 construction in Southern California that have been
9 approved by the Energy Commission in the last few years,
10 and those are all expected to come online in 2013.

11 And we anticipate that there will be another
12 fossil power plant AFC filed later this month.

13 So, remaining challenges, obviously this is a
14 few of them, it could go on for a greater length.
15 Complete the AB 1318 effort, work with South Coast and
16 stakeholders to address the issues that will emerge in
17 the draft report.

18 Get a clear idea of the cost and benefits of
19 various options for replacing nuclear power in
20 California. Irrespective of the near term issues of San
21 Onofre, the Energy Commission's 2011 IEPR asked the ISO
22 to collaborate with the energy agencies in examining
23 nuclear power replacement and to provide a technical
24 basis for understanding what our options are, both for
25 reliability, as well as the energy that those facilities

1 have generated.

2 Assure that the procurement process actually
3 makes progress to add resources to the extent there are
4 system, local and flexible needs.

5 And, clearly, the presentations that we'll hear
6 from today will demonstrate that there are local needs
7 as a result of OTC facility retirement, and flexible
8 ones, probably, as well.

9 And to the extent that any of these analyses and
10 decisions that come out of them lead to a decision to
11 advise the Water Board of changes in compliance dates,
12 the time to do that is in the annual report to them on
13 March of next year.

14 So, I think I'm repeating mostly what Suzanne
15 has already said, but let me just point out to you that
16 there are five questions attached to the agenda and
17 those are bigger, or overarching questions that no one
18 presenter is probably going to be speaking to today, and
19 very much appreciate comments using those questions as a
20 framework.

21 Thank you. Any questions?

22 MS. KOROSEC: Dr. Jaske, thank you for that
23 presentation. I don't know if we're going to be taking
24 Q&A specifically on your portion of the presentation,
25 but we will have time for questions later.

1 Before we move to the next presenter, I want to
2 give an opportunity to James Goldstene, with the
3 California Air Resources Board, who's joined us on the
4 dais to present any introductory comments he would like
5 to.

6 MR. GOLDSTENE: Well, thank you. I'm sorry I
7 arrived late. I don't have too much to say. We
8 recognize the importance of a coordinated approach and
9 we're glad that the ARB -- and Mary Nichols and I are
10 glad that we're able to do this, and to be here, and to
11 listen to the presentations today.

12 To be here with the ISO, and the CEC, and the
13 PUC is very important as we work together on analyzing
14 and making determinations about what the energy
15 forecasts are going to be.

16 So, thank you for having me here.

17 MS. KOROSEC: All right, our next speaker will
18 be Neil Millar. He'll talk about some of the analyses
19 by the California Independent System Operator.

20 MR. MILLAR: Thank you. And thank you for the
21 opportunity to give this update. There are three areas
22 I was asked to provide an update on today.

23 First, I'll overview the transmission plans and
24 planning we have in place to address the summer of 2013
25 situation with the San Onofre nuclear generation not

1 operating.

2 I'll then move on to give an overview of the
3 once-through cooling requirement analysis that's been
4 referred to earlier that we -- sorry about that.

5 Is that also the feedback?

6 I'll then move on to provide an overview of the
7 once-through cooling analysis that the ISO has been
8 conducting across the entire ISO footprint.

9 And then I'll also touch on the planning
10 schedule and activities that we have planned to assess
11 the nuclear preparedness in the longer term, moving
12 forward from the work that's already underway.

13 So, first starting with the operational
14 preparedness for the summer of 2012, our analysis has
15 shown that at present we don't see or don't anticipate a
16 problem on a statewide resource basis for the summer of
17 2012, with both units not operating at San Onofre.

18 We do, however, and have identified a number of
19 local area issues that needed very prompt action. As
20 was mentioned earlier, if these units went away with no
21 remediation, we very much would have been in a tough
22 circumstance this summer.

23 We do think that the plan we have in place gets
24 us to the right side of the probability line, but that
25 depends on the combination -- sorry -- that depends on

1 the combination of outages and high weather
2 circumstances that we experience through the summer.

3 Just to reiterate and to provide a bit of an
4 overview of the situation, San Onofre nuclear generation
5 plays a key role both in the Los Angeles local capacity
6 area, as well as into the San Diego area.

7 Technically, the plant is part of the L.A. area
8 when we're adding loads and resources, and looking at
9 constraints, and congestion into L.A. It also plays a
10 pivotal role in supporting the transfer path for
11 electricity into San Diego, which is why the impacts on
12 San Diego have been either as great or greater than for
13 Los Angeles.

14 Now, under normal planning conditions we do
15 study and look ahead to prepare for the loss of a single
16 generator as a base condition. Both units has not
17 happened before going into a summer period, as I
18 understand, in 30 years, so it does create a unique set
19 of challenges.

20 And I should also mention that just because
21 we're starting the summer seasons with several units out
22 of service, from a probabilistic basis we now have to
23 look forward to the summer assuming that any other kind
24 of contingency that could happen could still happen
25 going forward. Just because we've had, I'll say bad

1 luck, to get to this point doesn't predicate that we're
2 going to have good or bad luck from this point forward.

3 Now, we have, in cooperation with a significant
4 number of industry participants, we have put in place a
5 number of measures to better position us to get through
6 the summer of 2012.

7 Most notable were the bringing Huntington Beach
8 3 and 4 gas-fired generation -- bringing Huntington
9 Beach 3 and 4 gas-fired generation out of retirement and
10 returning to service.

11 That generating plant is the one plant that's
12 also on that key transfer path into San Diego. And it
13 will play a pivotal role in helping us get through the
14 summer.

15 As well, Southern California Edison did expedite
16 a reconfiguration on the Barre-Ellis 230-kV transmission
17 system that also helped address an existing concern, and
18 also provided the most capability that that 230-kV
19 system would be capable of providing.

20 Also, very notably, the Sunrise Transmission
21 Line has been placed into service, as well as related
22 safety net protections that, in the event of extreme
23 contingencies, these safety nets would step in to shed
24 load on a contingency basis to control the amount of
25 load shed that occurs, and to prevent the cascading

1 outage.

2 As well, other steps that have been taken have
3 to fully fund the Flex Alert programs so that we have
4 the best capability from demand side management.

5 We have also been working with the various
6 agencies and utilities to address -- to make the best
7 use of the demand response programs that are available.

8 And I should mention that demand response
9 programs are normally tailored to addressing broader
10 system resource requirements. They tend to be less
11 operationally useful at addressing the very specific
12 local constraint. But we're also working to make sure
13 that we make the best use of the resources that we have.

14 We've also reached out to military and public
15 agencies on the demand side management side to see what
16 support can be provided and to make sure that everyone
17 is fully prepared for the situation and knows that we
18 are entering into a higher risk situation.

19 And, finally, through the operations side the
20 dialogue has taken place to ensure that we're going into
21 the summer with the existing generation fleet as well
22 maintained and prepared as can be to help minimize the
23 possibility of unclaimed generator outages.

24 Now, looking at this from an operational
25 perspective the focus has been, clearly, on both the Los

1 Angeles Basin and the San Diego areas. The two are
2 heavily interrelated because one of the major transfer
3 paths into San Diego is through Los Angeles.

4 So, when we are looking at the local capacity
5 requirements we tend to have to look at it as an
6 aggregated whole, starting with the San Diego
7 requirements, meeting those needs, first, and then
8 layering on the additional requirements for Los Angeles.
9 Because, depending on the amount of the requirement in
10 the San Diego area, that can have an effect on the Los
11 Angeles area.

12 As I think you've heard before, there are a
13 number of moving parts for making all of this work and
14 they need to be carefully coordinated.

15 Now, as we move forward this is a case of hoping
16 for the best, but planning for the worst. As we look
17 forward to the summer of '13 we're starting the planning
18 now, to make the best use of the additional year of lead
19 time, to look at what measures can be put in place in
20 the event that we go into another summer with neither
21 San Onofre units operating.

22 The major changes from 2012 that we need to
23 address right off the top is increased load growth.

24 Also, Huntington Beach 3 and 4 are expected to
25 return to retirement.

1 We do have in place, and we'll also have
2 additional operating experience and confidence, both
3 with the Barre-Ellis upgrades, the Sunrise transmission
4 line, and the related facilities, and the protection
5 systems.

6 And the special protection systems do give us
7 additional capability that we'll be looking at. We also
8 will have further operating experience with those and
9 further comfort.

10 Now, when we are looking at the options, we do
11 need to consider all of the issues. We need to maintain
12 local reliability, we need to look at what additional
13 mitigations can be implemented within a year.

14 We also want to look forward on cost
15 effectiveness. If we do move forward with any
16 intermediate mitigations, we do want that mitigation to
17 be aligned with long-term requirements so that any
18 capital that is spent fits into a long-term picture.

19 And we need to make sure that it really is
20 tightly aligned with the long-term considerations.

21 So at this point, and over the next month or
22 two, we are doing the planning activities where we're
23 not taking any options off the table for consideration.
24 We want to look at as wide a range of possibilities as
25 we can consider.

1 Now, what that full range of options looks like
2 is pretty much running the whole range. Transmission
3 dynamic support is one area we want to explore. We've
4 started the dialogue around what additional reactive
5 support could be put in place.

6 This tends to have to be dynamic, the kind of
7 reactive or voltage support that can step in and respond
8 instantaneously to a condition.

9 That includes devices both called synchronous
10 condensers, as well as static VAR compensators.

11 We are looking to see if there are any other
12 transmitted mitigations that could be put in place
13 relatively quickly to help minimize any other burdens or
14 gaps, or entry points that we might have on the system.

15 Now, a year is not much time.

16 MR. BERBERICH: Neil, just a quick primer on
17 these things. We need voltage. Voltage is similar to
18 water pressure on a water system, it makes things flow.
19 And it's required that we have this, so not only do you
20 have to have electricity, you have to make it flow and
21 voltage does that.

22 And these devices that Neil was just talking
23 about provide voltage support.

24 In Huntington Beach, as an example Huntington
25 Beach 3 and 4, they're important in that they replace

1 some of the San Onofre power, but more importantly they
2 provide voltage support. And they provide voltage
3 support into the L.A. Basin and they provide voltage
4 support into San Diego, as well.

5 So, it's almost more important that that's
6 there, as opposed to the energy.

7 Now, a synchronous condenser, effectively what
8 that does is it spins a turbine and the turbine, with
9 its spinning, is without a power plant behind it, if you
10 will. So, it's disconnecting the power plant and you
11 have a motor that spins a turbine, that provides voltage
12 support.

13 Static VAR compensator, and Neil can talk about
14 that a little bit more, but that's a transmission
15 element that also provides voltage support, too.

16 For long-lead items, they're capital items, it
17 may be possible to use these, as an example, if you
18 can't use Huntington Beach 3 and 4 again next year.

19 So, anyway, sorry, Neil, I just --

20 MR. MILLAR: No, thank you very much. I did
21 dive straight into some of the technical detail, without
22 maybe touching on some of the higher points first, so
23 thank you.

24 COMMISSION CHAIR WEISENMILLER: Neil, could you
25 just give the ten-second version of what a static VAR

1 compensator is?

2 MR. MILLAR: So, a static VAR compensator is
3 basically a series of capacitors and reactors.
4 Capacitors are basically, boiled down most
5 simplistically, two plates that build up an electric
6 field, they help you support voltage and increase the
7 voltage on an AC power system.

8 The reactors on the other side are coils of
9 water that produce magnetic fields and actually pull the
10 voltage back down.

11 A static bar compensator uses, basically, a
12 beefed up transistor technology to control exactly how
13 much of each you have in service, millisecond by
14 millisecond, to produce exactly the amount of support
15 and to respond instantly.

16 Unlike the generators, which can also provide
17 the support through their control systems, these devices
18 don't provide any system inertia, but they can provide
19 the voltage support that Steve was referring to.

20 Now, they can be quite bulky, they involve a
21 great deal of equipment, and we have started the
22 dialogue to see if there are any existing facilities
23 that were in construction, pipelines that could perhaps
24 be re-diverted.

25 COMMISSION CHAIR WEISENMILLER: Thanks.

1 MR. MILLAR: And, yes, and we have also started
2 some preliminary analysis around the relative
3 effectiveness of the generation to provide that kind of
4 voltage support into the area.

5 And the voltage support is required for two
6 reasons. The Southern Orange County area does have a
7 number of contingencies that could leave -- get at-risk,
8 where the voltage is a problem.

9 And the alternative, and when I was referring to
10 these safety nets, these would detect the problem and
11 shut a controlled amount of load to avoid a widespread
12 outage that cascades and keeps circling outward.

13 The other area where we have the voltage concern
14 is on the transfer path, itself, into San Diego, where a
15 high surge in power in San Diego, caused by a
16 contingency, knocking off another supply or another
17 generator could collapse the voltage on that transfer
18 path. And in that case load shedding, using these
19 safety nets, could be required in San Diego.

20 So, whether it's through a controlled device or
21 through manual operation we do see that there is a
22 heightened risk of load shedding as we look at the
23 summer of 2012. But a controlled shedding is --

24 COMMISSION CHAIR WEISENMILLER: Thirteen?

25 MR. MILLAR: Sorry?

1 COMMISSION CHAIR WEISENMILLER: 2012 or 2013?

2 MR. MILLAR: Well, now I'm jumping back even to
3 2012, with the system in place in 2012 we still have a
4 higher likelihood of shed.

5 So, I should move back to the 2013 contingency
6 planning. We are looking at what we can do to further
7 hardened the system from the summer of 2012, looking at
8 additional devices. Obviously, those are not able to be
9 installed by the summer of 2012.

10 On the operations side we will be examining the
11 special protection systems that have been put in place.
12 Protection and control systems tend to be faster to
13 design and implement than major transmission facilities.

14 So, we will be looking at further special
15 protection schemes, also to make the schemes that have
16 been put in place more reliable and secure.

17 We're also looking at the generation fleet. We
18 do have additional generation that is moving forward in
19 the 2013 timeframe. We will want to make sure that if
20 generation can be advanced to be in place before the
21 summer, as opposed to after the summer, that those steps
22 are taken.

23 We will also want to look at the -- what
24 targeted distributed generation options are available.

25 We've listed emission trades because the other

1 issue is that not all generating plants, even if they're
2 in the same area, are exactly equivalent. Because of
3 the way the electric system is designed some power
4 plants within San Diego and within the L.A. Basin are
5 more effective than others, so we do want to make sure
6 that we're able to operate the most effective generating
7 plants.

8 Then we'll be taking a look at the emission
9 trades issue as part of that, and that could include
10 reexamining Huntington Beach 3 and 4.

11 The other things we'll be looking at are what
12 additional energy conservation investments for demand
13 response enhancements can be made over the course of the
14 next year to make sure we go into 2013 addressing the
15 incremental challenges as best we can, and make the best
16 use of the year that we have.

17 Now, I'm going to switch gears and go into a
18 review of the local capacity needs analysis that was
19 taken, that was undertaken this year as part of our
20 annual transmission planning study program. Mike Jaske
21 referred to that earlier.

22 To get this overview I'll touch on the
23 background of our transmission planning process, the
24 local capacity study process, itself, which is a subset
25 of that broader piece of work. We'll talk about the

1 objectives of the studies and then we'll get into a
2 discussion of the results.

3 I should qualify, these results are also
4 available and documented in our annual transmission
5 plan, which was approved by our board of governors in
6 March of this year, and is available on our website.
7 So, this is a summary of those findings.

8 Our annual transmission planning process is a
9 comprehensive cycle where we look at all facets of
10 transmission reinforcement requirements for the system
11 in one process.

12 We spend considerable time going through a
13 consultation process with stakeholders, developing the
14 study assumptions at the front, through the process.

15 The bulk of the labor then goes into the
16 detailed analysis that reaches up until the March time
17 frame of each year, where we present the comprehensive
18 plan that looks at needs to meet basic reliability
19 requirements on the system, requirements to meet the
20 State's policy objectives, as well as any other
21 additional transmission projects that may be warranted
22 for economic reasons, that they alleviate congestion on
23 the system and are worth pursuing from a cost-
24 effectiveness point of view, for that reason only.

25 The third stage in our program is actually a

1 procurement of those transmission facilities, which can
2 include either direct assigning of certain projects to
3 the incumbent transmission companies, or having a
4 competitive solicitation process for independent
5 transmission to compete with incumbent transmission
6 owners.

7 Now, when we're looking at our annual
8 transmission plan it was mentioned that within the
9 annual transmission planning process we did embark on a
10 bit of a new exercise this year where we overlaid the
11 once-through cooling generation on the local capacity
12 areas to look at the areas.

13 When we refer to a local capacity area, these
14 are areas that the transmission, alone, cannot support
15 all of the load in the area. We are dependent on
16 generation inside those pockets, a combination of
17 generation inside the pocket and transmission coming in
18 from the outside to serve the load.

19 Now, in doing the analysis of the once-through
20 cooling generation and how that lines up with the local
21 capacity requirements we did do a comprehensive analysis
22 looking at all four of the renewable energy portfolios
23 that we studied in our transmission planning cycle.

24 These portfolios came to us through the Public
25 Utilities Commission. We also rely on inputs from the

1 California Energy Commission and, in particular, use the
2 2009 adopted load forecast.

3 We also incorporated into this planning cycle
4 the use of our established program and methodology for
5 determining annual local needs. And I'll touch on that
6 a bit more on the next slide.

7 Our local requirements program normally has two
8 stages, studying the year-ahead requirements that are
9 actually used for procurement and contracting purposes,
10 and doing a five-year look ahead to help set procurement
11 planning directions.

12 This was the first time that we applied those
13 same methodologies to look out to the outer edge of our
14 planning horizon to ten years, studying the local
15 requirements, and also marrying in the requirements from
16 once-through cooling generation. Which was really
17 looking at the case of if we have a local capacity
18 requirement, can that be met through other generation or
19 does it require us dipping into and counting on once-
20 through cooling generation as well.

21 Now, when we look out at the ten-year horizon,
22 we assumed that the once-through cooling generation in
23 assessing the amounts, that that capacity would be
24 provided either by those generators or by repowered
25 generators that are electrically similar.

1 Our local capacity requirements methodology is
2 quite involved, setting out all of the contingencies we
3 have to look at and the things, the issues we have to
4 take care of. That is available, as well, on our
5 website.

6 Now, this slide is just an overview, just a list
7 of the -- that we provided for information, of all of
8 the generators, the once-through cooling generators and
9 the current compliance time frames that we were taking
10 into account.

11 Now, all of our analysis at this point, when we
12 were looking through this, expected or was based on the
13 San Onofre generation being in service.

14 As well as the generation that's already in
15 service, we also factored in new generation that was
16 permitted and generally under construction. So, we took
17 additional generation into account and I've provided
18 that list here.

19 Probably most notable for the L.A. Basin area
20 was including the El Segundo plant, the Walnut Creek
21 Energy Center, and the Sentinel Peaking project all
22 have, depending on the timing of that generation can
23 also help with the L.A. load growth situation.

24 We also build into the analysis the transmission
25 lines that the ISO have already approved and is moving

1 forward with the transmission owners. I've provided the
2 list here.

3 At the time we did the analysis, of course the
4 Sunrise Power line, which was only energized earlier
5 this week, over the weekend and this week, was still
6 under construction, so it was still listed as a new
7 project under development.

8 The bulk of these projects are either driven
9 through the annual transmission planning cycle or have
10 been identified as network upgrades necessary to help
11 generation move forward through the generator
12 interconnection process.

13 Now, with taking all of those inputs into
14 account we then did the detailed analysis for all of the
15 local capacity areas that we have identified in the ISO
16 footprint. Now, that's ten areas overall.

17 We identified only three areas that do require
18 some level of reliance on once-through cooling
19 generation, so I'm going to focus this update on those
20 areas.

21 First, the Los Angeles Basin area, we also
22 looked not only at the greater L.A. Basin area, but also
23 constraints feeding into Western Los Angeles.

24 I have a slide here, just demonstrating the
25 overall resources that we look at. We have about,

1 currently about 12,000 megawatts of generation in the
2 larger L.A. Basin area, just over 5,000 megawatts of
3 once-through cooling generation.

4 This table provides the results of our analysis.
5 The first four rows -- the first four rows identify the
6 local capacity requirements for each of the different
7 renewable energy portfolios that we study. These are
8 different forecasts for how the ISO's footprint would
9 meet the 33-percent RPS goals under different scenarios.

10 And because these were produced resources that
11 would help on different transfer paths into the area,
12 the local requirements under each of these scenarios can
13 be slightly different.

14 So, we did study the range of possibilities. We
15 also study a high- and a low-load scenario.

16 And you'll see that the -- we assumed then that
17 the generation could be -- would be provided first by
18 non-once-through cooling generation, and then looked at
19 the incremental requirement for once-through cooling
20 generation on top of that.

21 And what's that produced is a range for the L.A.
22 Basin of requiring anywhere from 1,900 megawatts at a
23 low, to 3,900 megawatts at a high, depending on how this
24 other -- the other generation in the system develops and
25 how some of those other assumptions move forward.

1 So, that's quite a range, but the good news is
2 that that's considerably down from the 5,100 megawatts
3 of currently installed once-through cooling generation.

4 Now, I'll move on to the Big Creek Ventura area
5 to the north of Los Angeles. So, really, this area
6 starts basically to the immediate north, with some key
7 transmission interface points located right between the
8 two areas.

9 The existing generation that we have in the
10 area, a total, is over 5,000 megawatts. The once-
11 through cooling generation is just over 2,000 megawatts
12 in that region.

13 And this was one area that was totally
14 unaffected by the generation portfolios that we studied.
15 These are much tighter geographic requirements that
16 across all of the scenarios we had the same need, just
17 over 400 megawatts of once-through cooling generation.

18 Now, I'll move on to the last area, the San
19 Diego/LCR area. With the addition of the Sunrise Power
20 Line, the 500 kV line from Imperial Valley over to the
21 new Suncrest substation, we will also be needing to
22 test, going forward, both the traditional San Diego
23 area, as well as a slightly expanded region that reaches
24 out to include some of the additional generation that we
25 expect to see connecting along the Sunrise Power Line.

1 The capacity inside San Diego is relatively low
2 compared to the total load requirement, 3,000 megawatts
3 of total generation inside the area. Our one and ten
4 peak load forecast, the 2009 forecast for the San Diego
5 area was approximately 5,480 megawatts, once-through
6 cooling generation of 950 megawatts.

7 And the San Diego region is particularly
8 affected by import capability into that region.

9 So, in looking at the analysis here, we've
10 provided two sets of numbers in the range. Under each
11 column the high end number is our current requirement
12 for once-through cooling generation, with the plants
13 that are in service today.

14 The low end of each range assumes that the San
15 Diego Gas and Electric proposed generation, that's
16 currently the subject of the power purchase agreements,
17 are the subject of the proceeding going on at this time.

18 We've taken those into account and provided the
19 low end of each range based on assuming those projects
20 move forward.

21 So, at the low end of the range we're looking at
22 either zero to 300 megawatts of additional requirement.
23 And at the high end of the range 300 to just over 700
24 megawatts for additional once-through cooling
25 requirements.

1 Now, as part of our analysis we also went on to
2 identify transmission upgrades to take care of
3 maintaining maximum import capabilities into the area.

4 We also tested and identified the requirements
5 that would be needed to address sub-area issues inside
6 the San Diego area.

7 And, finally, we also performed a sensitivity to
8 the retirement of the Encina Power Plant.

9 So, with the upgrades that are in flight, we do
10 see that the sub-area constraints are largely eliminated
11 inside San Diego, so we have to worry about the big
12 picture. But within San Diego, the constraints there
13 are manageable.

14 We have identified that the tradeoff between the
15 Encina Power Plant and the new proposed generation does
16 trigger, as well, some smaller upgrades. These are not
17 necessarily material, but they are details that would
18 need to be taken care of if the new generation moved
19 forward and the Encina Power Plant retired.

20 So, in conclusion on this topic, we have been
21 able to provide the range of values based on the
22 different scenarios that we've been asked to look at.
23 That data is now available and we see it being critical
24 to helping inform decision making going forward.

25 Now, the third item that I will touch on are the

1 plans that we are putting in place to study a long-term
2 future, both for future preparedness in the event of
3 unplanned outages, as well as what would a reasonable
4 transmission plan look like with neither generating
5 plant, neither San Onofre or Diablo Canyon in service in
6 the long term.

7 Now, these are very much long-term studies
8 looking out to the maximum end of our planning horizon.

9 Now, Diablo Canyon is located, obviously, on the
10 coast, but also it's connected to the transmission grid,
11 the 500 kV transmission grid, right at the seam between
12 the Pacific Gas and Electric system and the Southern
13 California Edison System.

14 Within the industry, the transfer path north is
15 known as path 15 and the south path 26. And a few of us
16 were there when these paths started getting numbered,
17 way back in the eighties, and we literally started at
18 the north of the system and then went south.

19 So, there's nothing deeper to the numbers, other
20 than that was the order at the time.

21 But this terminology has become very pervasive
22 over the last 30 years. Path 15, to the north, is one
23 of the key transfer paths on our backbone and path 26
24 the other.

25 Now, when we're looking at the long-term plan we

1 really need to make sure that the long-term planning and
2 any intermediate steps that we take aligns with
3 reasonable long-term outcomes.

4 So, this is a case of wanting to start with the
5 end in mind. The first step that we want to look at in
6 our transmission planning is the focus on the long-term
7 issue, first, which is really a scenario of looking out
8 to the end of our planning horizon. What issues would
9 we have to address and what would a reasonable plan look
10 like if we assumed the long-term retirement, permanent
11 retirement of both power plants?

12 From there, we are then backing up to look at
13 what mid-term contingency planning would be a good idea
14 to put in place that would align with the long-term plan
15 in the event of future unplanned long-term outages.

16 Now, we also want to line that work up even with
17 steps we take in the very short term, even for next
18 year. But there, we'll have to rely on very preliminary
19 analysis.

20 Now, in looking at the long-term study
21 requirements, these are really driven by two needs.
22 One, the utilities require this kind of information as
23 part of their re-licensing assessment.

24 We also see it being extremely helpful in
25 setting the tone for these mid-term plans.

1 Now, the plants are connected at two different
2 parts of the system. Some of the issues that they bring
3 to the table are in common, the situation of the overall
4 resource implications for the ISO as a system.

5 Diablo Canyon will be key to the north, Northern
6 California requirements, San Onofre to the south.

7 The set of transmission issues that they bring
8 to the table are there are some common and, also, some
9 that are very unique.

10 This kind of analysis, the plan here is to do a
11 thorough analysis looking at the entire range of impacts
12 so that we have a good lock on the long-term
13 requirements.

14 Our plan is to have this work conducted in
15 parallel with our annual transmission planning cycle,
16 and to have these results available by the end of the
17 year.

18 Now, stepping back from that work we're also
19 building, into the same planning effort, the specific
20 request from the California Energy Commission that was
21 built into the 2011 IEPR report, which is to look at
22 what additional mitigations could or should be
23 considered to be better prepared for future, long-term,
24 and unplanned outages.

25 Now that, to us, is a case of backing up from

1 the long-term plan. We are intending to study a five-
2 year scenario giving -- as being a reasonable amount of
3 time to put in mitigations that would make sense, but
4 also wouldn't bind us to a particular future outcome.

5 Five years is enough time to put in a medium-
6 sized transmission project but, bluntly, not time to put
7 in a major transmission reinforcement, such as a major
8 500 kV transmission line over a hundred miles.

9 Now, in that analysis we will be incorporating
10 the once-through cooling policy implications, as well as
11 testing the local capacity requirements, especially for
12 L.A. and San Diego, assuming this generation is out of
13 service.

14 Because, as I mentioned earlier, not all of the
15 generating plants are created equal, they don't all
16 provide equivalent support based on their specific
17 location inside the area.

18 So, the study results we will be driving
19 towards, the long-term reassessment plans, focusing on a
20 long-term plan for future eventual retirement. A mid-
21 term study looking at contingency planning, considering
22 what elements should be advanced over the next,
23 reasonably, two to five years.

24 We'll be targeting the end of 2012 for both of
25 those sets of work.

1 And I should have mentioned earlier, when I was
2 talking about the summer of 2013 that in order to make
3 the best use of the year we have to actually implement
4 solutions, we see needing to have that work done and our
5 recommended plan forward by the end of July.

6 So, that work we'll be starting to communicate
7 through August and September.

8 Now, that's the end of the slide deck. Would we
9 want to have time for questions?

10 COMMISSIONER PETERMAN: Well, first of all,
11 Neil, thank you for that overview, that was very
12 comprehensive and I found that very informative.

13 Any questions, first, from anyone on the dais?

14 COMMISSION CHAIR WEISENMILLER: Yeah, I have a
15 couple of questions, Neil, I think.

16 The first one was people will be hearing a lot
17 today about, you know, looking at load and regional
18 balance and I guess if one is to be useful for people is
19 to understand -- I think as we go through this we'll
20 hear people who have done comparisons between loads and
21 resources and trying to make sure things are in balance.

22 However, your modeling, as I understand it,
23 looks more at the transmission system and the ability to
24 flow power from specific generators to the loads, but
25 also dealing with different types of contingencies on

1 the system afterwards, in terms of transient
2 instability, and stuff.

3 Can you just give people a little bit of
4 perspective on what's in your modeling that may not be
5 in a more conventional load resource balance?

6 MR. MILLAR: By all means. The different kinds
7 of studies that we do cover all of the range of looking
8 at thermal limitations, can the transmission wires into
9 the area simply carry that amount of megawatts without
10 overheating?

11 There are very precise limits that we have in
12 place on the transmission lines. Our power flow studies
13 have to take those into account.

14 We also look at the voltage situation following
15 a contingency, the loss of a major generator or a
16 transmission line. Is there adequate voltage support?

17 And as Steve put earlier, is there enough water
18 pressure to keep the water flowing? Having the water
19 doesn't do you any good if you can't move it to where
20 it's needed.

21 And then on the stability issue we do the
22 detailed stability analysis to ensure that this very
23 complicated piece of equipment, that we call the
24 electricity system, can actually respond on a
25 millisecond-by-millisecond basis to what happens

1 immediately after a major contingency.

2 Even with adequate load and resource balances,
3 and enough thermal capability, when the power system
4 does experience a major contingency we go through 5, to
5 10, to 15 seconds where huge levels of power are
6 bouncing around within the system. And the system has
7 to be able to withstand those flows.

8 So, all of those studies have to be taken into
9 account.

10 Now, in terms of the contingencies that we've
11 prepared for, we do follow the Federal standards
12 established by the North American Electric Reliability
13 Corporation.

14 Within the Western Interconnect, WECC also have
15 additional requirements recognizing that our system is
16 nowhere near as densely coupled as much of the Eastern
17 interconnect.

18 So, we have additional requirements there that
19 are necessary to provide reliable operation.

20 And within California, the California ISO has a
21 few additional requirements also tailored to meeting our
22 specific needs of providing reliable service.

23 Now, all of that is in addition to fundamentally
24 meeting your basic load and resource requirements. So,
25 that's layered on top of the basic load and resource

1 balance that you were referring to.

2 COMMISSION CHAIR WEISENMILLER: Yeah, and I
3 guess one other -- well, in terms of that area,
4 obviously in terms of what could go wrong, what were
5 your major takeaways -- you know, so this is -- you're
6 doing the modeling and we also have the real world and,
7 obviously, last September, in the September outage we
8 had sort of a number of things go wrong.

9 And so the basic takeaway is what message does
10 that tell you in modeling and what are we doing to make
11 sure that's not going to reoccur this summer or next
12 summer?

13 MR. MILLAR: Well, with the September 8th
14 outage, the initiating event was the kind of event of
15 the first line going out of service, it is the kind of
16 event the system is expected to be able to respond to.

17 The interaction between different protection
18 systems is obviously very important.

19 There were different circumstances at play,
20 though, of first we do assume that we'll be operating
21 the system in a safe, what's called a secure end-line
22 sworn situation, where we can experience a contingency.

23 And that requires both the plants to be put in
24 place and the system needs to be operated to that level.

25 Also, the issue of special protection systems

1 being potentially bumping into each other; these are all
2 complicated systems, monitoring different parameters and
3 taking specific actions.

4 We do need to make sure that in real time the
5 action that occurs is the right action at the right
6 time.

7 As part of our planning cycle this year, we are
8 doing a review of the special protection systems we have
9 in place. And there are additional activities, focusing
10 on that work, coming out of the initial recommendations
11 and findings from the September 8th outage.

12 COMMISSIONER PETERMAN: I think it's always --

13 COMMISSION CHAIR WEISENMILLER: I see.

14 COMMISSIONER PETERMAN: Sorry, excuse me.

15 COMMISSION CHAIR WEISENMILLER: One quick thing.

16 COMMISSIONER PETERMAN: Steve?

17 MR. BERBERICH: Yeah, a couple of other things
18 that have changed. You know, the September 8th outage in
19 the Pacific Southwest was a -- multiple contingencies
20 happened during this thing.

21 And as Neil said, balancing authorities are
22 required to operate, to absorb those kinds of things and
23 so, frankly, the outage shouldn't have happened.

24 And we've been working with the adjacent
25 balancing authorities because, frankly, the outages

1 started to the east of California and then kind of
2 propagated in California.

3 But there were two things that did happen that
4 exacerbated the outage. One is what's called a special
5 protection scheme dropped some generation, which is not
6 helpful when you have an event like that. And that's
7 been disabled, it's called the S-Line protection, for
8 your reference.

9 And then, also, there's a separation scheme on
10 the transmission grid roughly at the San Onofre Nuclear
11 Plant. It has nothing to do with the nuclear plant,
12 that's just where it is. It's on the transmission
13 system.

14 And that separation scheme has been disabled
15 and, as we speak, it's happened.

16 COMMISSIONER PETERMAN: And I was just going to
17 add, I know you've touched a bit on this Steve and Neil,
18 that in order to facilitate that coordination amongst
19 balancing authorities, WECC, at their Reliability
20 Center, has added more staff. Because as you point out,
21 it was not something you had -- were able to anticipate
22 or had control over.

23 And so having that broader oversight will be
24 valuable, as well.

25 MR. BERBERICH: And one other thing I would add

1 is that we don't have -- we don't have any jurisdiction
2 over other balancing authorities.

3 MR. MILLAR: Right.

4 MR. BERBERICH: We operate our balancing
5 authority to, frankly, Federal regulations and we get
6 fined if we don't.

7 And what we've done, though, is we've taken some
8 action to have greater visibility into adjacent
9 balancing authorities and, specifically, into the
10 Imperial Irrigation District.

11 There's two major transformers in there that we
12 now have visibility to, so that's also changed. And,
13 you know, the sharing of information, I think, is
14 heightened.

15 COMMISSION CHAIR WEISENMILLER: And, Neil, a
16 couple more questions for you and these are more
17 directionally.

18 So, you've presented the once-through cooling
19 studies and you've provided ranges. Now, in terms of
20 assuming or looking at a case without San Onofre, either
21 one unit or two units, what's your expectation of the
22 amount of megawatts that would be needed? How would
23 that affect your study conclusions?

24 Well, again, more directionally than precise
25 numbers.

1 MR. MILLAR: So how, directionally, the total
2 resources are ahead, 8,000 -- or, sorry, eight percent
3 of the ISO's generation that has also been,
4 historically, extremely reliable in a base load
5 generation, from a resource issue there's an impact
6 there that those resources have to be replaced
7 somewhere.

8 The big question will be where are those
9 resources coming from and especially given that it's a
10 base load resource that we're talking about.

11 So, we do expect that to have a significant
12 impact on our requirements.

13 In terms of local requirements, the San Onofre
14 generating unit will obviously have a much bigger impact
15 than Diablo Canyon.

16 Diablo Canyon's a key system resource and does
17 largely influence flows on the backbone. So, the issues
18 that we'll be looking at there are more on a broad grid
19 backbone strength and security side.

20 When we look at San Onofre, there we'll be
21 focusing both on the needs inside Los Angeles, as well
22 as the L.A. Basin, as well as the transfer path, as
23 we've had to for the preparedness plans here.

24 But losing a base load generating facility
25 obviously is a much bigger impact. Also, they've

1 provided considerable system inertia on the coast to
2 help with the system stability issues.

3 So, this analysis we'll have to be looking at as
4 we go through and produce our results by the year end.

5 COMMISSION CHAIR WEISENMILLER: Okay. And my
6 last question is, obviously, we're looking at a number
7 of policies which can reduce energy sales of peak,
8 energy efficient, demand response.

9 But in terms of your modeling, you're looking at
10 a number of characteristics, inertia, flexibility.

11 So how does pushing down, you know, and I assume
12 it's not a megawatt-for-megawatt effect, and I'm looking
13 at if you have any ball park sense on that or Steve,
14 obviously.

15 MR. MILLAR: Well, in considering demand side
16 management programs in general, if they're in place,
17 predictable, dependable, then we do factor those in on
18 the load forecast side to take into account the loads
19 that we need to consider.

20 We do and, in fact the planning criteria require
21 us to put a transmission system in place that can
22 survive what's called the stressed period. And because
23 of that we tend to look at the one in ten period.

24 And sometimes these numbers, the numbers that
25 you hear on the power system, one in ten doesn't sound

1 very likely, but that means we are expecting to have
2 that happen once every ten years.

3 So, when that year occurs we are expected to
4 have the resources available so that we can provide
5 reliable service.

6 So, we do take these programs into account on a
7 system resource basis to the extent that we can see that
8 they can be depended on and included into sound
9 forecasting.

10 When we look, then, from a system resource side
11 and start to look more locally, these programs not only
12 have to be there and dependable, but they also have to
13 be in the right location. And that's often a much
14 bigger challenge to have -- to know exactly how much is
15 going to respond in a tighter and tighter geographic
16 basis.

17 So, until they're fully baked through the
18 forecasting process they tend not to be as helpful in
19 addressing the local capacity requirements.

20 The one other characteristic of the demand side
21 management programs that we have to consider is not only
22 how dependable it is, but how quickly it can respond.

23 After a major event has occurred on the system
24 and the system, God willing, has survived and settle
25 out, we're allowed under Federal standards, we're

1 allowed 30 minutes to get the system repositioned for
2 the next event.

3 So, that is where demand response programs, if
4 they can be implemented in that time frame, can be
5 helpful in getting us ready for the next event.

6 But 30 minutes is actually not very long to have
7 a resource, to have demand response take place that you
8 can guarantee it will be there. And the standards are
9 fairly unforgiving about being ready within 30 minutes,
10 not just initiating action to get ready. The action has
11 to take place.

12 So, overall these programs can be very helpful,
13 but the broader the area that you're looking at, the
14 more helpful they are. As you get closer and closer
15 into a tighter geographic area and looking at a real
16 time constraint then we have to look at them much --
17 take a much harder look at whether or not they will be a
18 valid operating tool in real time.

19 COMMISSION CHAIR WEISENMILLER: Okay. I would
20 just note that one issue that was pretty clear to us
21 from this year is that the climate change is really
22 affecting our energy system. And one of the things it
23 is affecting is what the peak load is and the frequency
24 of peaks.

25 We hope to do a much better job in the future in

1 incorporating that. So, your one in ten could very well
2 happen more frequently than you expect, and be worse
3 than you expect.

4 MR. BERBERICH: Yeah, Bob, if I might, a couple
5 of comments.

6 First of all, energy efficiency is excellent.
7 And let's be clear about that, I think the more that we
8 have the better things are.

9 It has a tendency -- we get two benefits from
10 it. One is just a zero overall load and -- and let me
11 also point out, to buttress your point, Bob, we find
12 that peaks are not coming down. So, the average amount
13 of power is coming down, but peaks aren't coming down,
14 so you have to have the capacity to be able to make
15 those peaks.

16 And energy efficiency helps temper that, for
17 sure. And, further, in unloads plants. And what I mean
18 by unloading a plant, you don't have to run them at the
19 peak, then you have some unused capacity to be able to
20 operate the system.

21 And as you add more renewables on the system,
22 the system moves around a lot so the unloaded capacity
23 becomes valuable.

24 So, I think the energy efficiency -- yeah, the
25 energy efficiency helps in multiple ways.

1 Now, demand response is a bit of a different
2 characteristic, sort of in the same ball park, but the
3 value to that is the dispatchability of it and the
4 ability to say we want you to reduce your load by 100
5 megawatts, or something like that, over this period time
6 and at that location. So, that's where demand response
7 comes in.

8 And I think working closely with the PUC we're
9 certainly, you know, eager to add more demand response
10 onto the system.

11 CPUC COMMISSIONER FLORIO: Just to follow up on
12 that, I think automated demand response is more valuable
13 than the type of demand response that requires human
14 intervention.

15 MR. BERBERICH: Commissioner Florio, that's
16 exactly right.

17 For us, here's what we need, we have to have
18 certainty to be able to operate the system. For
19 instance, if we know we're going to lose 100 megawatts
20 of wind, we know we have to have 100 megawatts to move.

21 So, we need to know that it's there, and it's
22 dispatchable, and it's responsive, and those are really
23 the characteristics that we look at.

24 CPUC COMMISSIONER FLORIO: Yeah, because I'm
25 thinking Edison has an air conditioner cycling program

1 and I believe that's automatically dispatched. Somebody
2 has to push the button, but once they do the load drop
3 is pretty reliable. Is that your experience?

4 MR. BERBERICH: I believe that's the case.

5 Well, I can tell you the load drop is very reliable. I
6 can't say it is exactly how Edison is handling the
7 automation of it. But, yeah, it's my understanding that
8 it is automated.

9 And I didn't really get to your point but, yes,
10 automation, I think, is an important element of it.

11 And also let me say there are technologies that
12 exist, if we can kind of harmonize them all, because we
13 could dim these lights ten percent and, frankly, no one
14 would notice.

15 CPUC COMMISSIONER FLORIO: Sure.

16 MR. BERBERICH: And we would have an automated
17 demand response and I think that would be a very
18 positive thing for California.

19 CPUC COMMISSIONER FLORIO: Great. A couple of
20 other questions just anticipating issues that we're
21 going to confront in the long-term procurement
22 proceeding.

23 You know, let's say we conclude that 3,000
24 megawatts are needed in the L.A. Basin because of the
25 OTC retirements, in order to fulfill that. I suspect

1 your first preference would be flexible gas generation
2 because it gives you kind of two things at once. It
3 gives you the capacity where you need it and it gives
4 you added flexibility.

5 But I'm sure we'll be asked about other types of
6 resources. For example, combined heat and power, if
7 located in the right place, my understanding is that
8 could help for the local capacity requirement, but it
9 may not give you the flexibility that you would get with
10 another -- with another plant that's there to generate
11 electricity and not to support another type of
12 operation.

13 MR. BERBERICH: I thought you were supposed to
14 answer these questions, Neil.

15 (Laughter)

16 CPUC COMMISSIONER FLORIO: I didn't mean to pick
17 on you.

18 MR. BERBERICH: It's okay, Commissioner Florio.

19 Certainly, combined heat and power is a useful
20 attribute on the system and would be welcome, and it can
21 provide some benefit.

22 Part of the issue, though, that we have to
23 balance and as we speak to the, you know, South Coast
24 Air Quality District people I think that will come to
25 the fore, is generally they have emissions as well. And

1 that has to be factored in to how much do you want to
2 rely on that.

3 And also, we need to make sure that it's not
4 aspirational. So, playing in the grid is an asymmetric
5 practice, asymmetric risk practice.

6 We can overshoot and if we overshoot, we get too
7 much capacity, we spend too much money. If we under-
8 shoot, we bet blackouts.

9 Now, you can kind of which one of those risks
10 would you rather have? And I can tell my preference is
11 to spend a little too much and have too much capacity.

12 So, and it takes five to seven years to build a
13 power plant and to repower these once-through cooling
14 units. And there's a bit of urgency at getting to this.

15 And I want to -- we welcome, and I want to be
16 clear about it, we welcome energy efficiency, and demand
17 response, and combined heat and power, and planning.

18 But we also -- we can't assume aspirational
19 goals, if that's fair.

20 COMMISSIONER PETERMAN: One quick question.

21 MR. BERBERICH: Sure.

22 COMMISSIONER PETERMAN: Just to further that
23 answer, if you don't mind, Steve, because I know we'll
24 be asked particularly about renewables, and we've been
25 asked about them as a part of our planning process we've

1 been doing at the Commission.

2 Can you or Neil just speak to, again, why those
3 are not necessarily direct replacements? We've touched
4 on the topic of inertia a few times, it might be good to
5 offer a definition of that.

6 MR. BERBERICH: Yeah, Neil's an engineer, I'll
7 let him handle it.

8 MR. MILLAR: Sure. Well, the major issue for
9 some of these programs is how quickly can they respond?
10 How dependable are they?

11 The operators have very tight time frames to
12 respond, to reposition the system when things are going
13 wrong, when there's already been a major event.

14 And some of these programs that are excellent on
15 a forecasted basis, on a day-ahead basis to help pull
16 down the peak load, and to the extent we can rely on
17 those, some level of those programs are factored in to
18 the load forecast that we rely upon from the CEC.

19 But once we go beyond that and try to turn some
20 of these tools, that are more effective on a day-ahead
21 or on a system-wide resource base, when we start looking
22 at them to help manage a very specific local concern
23 that's where they simply don't have the dependability to
24 be of use on the operating floor.

25 MR. BERBERICH: Okay, let me answer that a

1 little bit differently.

2 When you run the electrical system there's this
3 thing called inertia that's very important, and it's the
4 power to get it moving.

5 MR. MILLAR: Yeah.

6 MR. BERBERICH: And it provides the power to
7 your homes and your businesses. And things like solar,
8 for instance, doesn't have any inertia. So, and inertia
9 is a really important part of our planning process and,
10 Commissioner Peterman, I think that's what you're trying
11 to get at. Those are elements that we have to plan for,
12 too.

13 COMMISSION CHAIR WEISENMILLER: Yeah. I think,
14 Commissioner Peterman, one thing to look at, there is a
15 report that was done by LBNL, Joe Eto, that was done for
16 FERC, that looked at some of these issues and,
17 particularly, frequency response and the role of inertia
18 in dealing with that.

19 So, basically, if you have a unit trip, a
20 transmission line lost, then you can have these real
21 spikes in what's going on the system and inertia, to the
22 extent you've got that spinning mass, smooths out those
23 trips.

24 It was a remarkably understandable report for
25 what's a fairly complicated topic. And they certainly

1 have gone through some issues, like in Florida, where
2 you've had those real swings on the system by not having
3 enough inertia.

4 COMMISSIONER PETERMAN: So just to bring this
5 point home full circle, in terms of what we know that
6 can provide inertia, we know that generators can.

7 MR. MILLAR: Yes.

8 COMMISSIONER PETERMAN: And some of the devices
9 talked about earlier, the static VAR compensator is
10 slightly different. But are there other tools, besides
11 generation, that can provide this?

12 MR. MILLAR: Well, generators, large rotating
13 machine loads are basically the main two sources.

14 I mentioned the synchronous condenser earlier.
15 Basically a synchronous condenser is a generator that's
16 had its turbine taken away. It's a generator that's
17 spinning, it's drawing a little bit of current from the
18 system just to keep spinning, but it's providing that
19 inertia. And it's equipped to provide the voltage
20 support, like the generator, but what you're not getting
21 is any actual, real power produced. So, that's another
22 major source.

23 And we have seen more -- I'd say 30 years ago we
24 all thought synchronous condensers were a dead
25 technology. But with more renewable technology coming

1 online that doesn't produce enough inertia to provide
2 that flywheel effect to help a system ride through the
3 different bumps, synchronous condensers are making a
4 comeback.

5 Another technology shift that's occurring is
6 more small gas-fired generators. More gas-fired
7 generators are being built that actually have a clutch
8 technology that if you don't need the power, but you do
9 need the inertia, you can keep the generator spinning
10 without actually using the power supply system from the
11 generator.

12 COMMISSIONER PETERMAN: Thank you.

13 MR. BERBERICH: One quick clarification, too,
14 that I forgot. When I was in the hall just a few
15 minutes ago, people were talking about once-through
16 cooling, what is once-through cooling? Which is a
17 question, let me speak to that really quickly.

18 The coastal units, basically, they bring in
19 seawater, they use it once and put it out to sea. So in
20 that case they are warming the water. In addition, they
21 bring in sea life.

22 And that's the impact on the environment and
23 that's why they are to be retired.

24 And so they would be repowered and, essentially,
25 they would use on-site cooling, a cooling tower,

1 something like that to cool the water, because these
2 plants are thermal plants with heat and they need to
3 have some sort of source of cooling.

4 Anyway, that's what once-through cooling is.
5 So, when you hear us talking about that, that's why
6 these plants are to be retired because they have an
7 environmental impact.

8 And the way to replace that, then, is you have
9 to replace the plant, fundamentally.

10 CPUC COMMISSIONER FLORIO: Yeah, a question on
11 the synchronous condensers. Could -- if you took one of
12 these once-through cooling plants that already, you
13 know, has a lot of infrastructure there and you stop
14 actually generating electricity there, would the
15 existing equipment be able to function as a synchronous
16 condenser with fairly limited -- I thought I understood
17 that PG&E's Hunter's Point plant operated that way for a
18 while before it shut down.

19 MR. MILLAR: That's actually an option we want
20 to explore. Some plants can be converted depending on
21 the original design and construction. Some can, some
22 can't, it's a case-by-case analysis.

23 CPUC COMMISSIONER FLORIO: Yeah. One other
24 topic I wanted to broach here and it's probably more a
25 long-term than a short-term issue, is energy storage.

1 you know, what characteristics would storage have to
2 have in order to help with these reliability criteria
3 that you're discussing?

4 MR. MILLAR: Well, depending on the nature of
5 the storage it can help us with some or more of the
6 situations.

7 You know, a hydro pump storage provides a great
8 deal of inertia, as well as providing the energy shaping
9 product.

10 Battery storage provides the energy shaping but,
11 obviously, it doesn't help with the system inertia, with
12 that issue.

13 So, the different storage projects, themselves,
14 can provide different groups of characteristics and we
15 need to look at those case by case. You know, shaping
16 the peak in the first place is a great start, but we
17 also need to address the system inertia system, as well.

18 CPUC COMMISSIONER FLORIO: Okay. I mean, so
19 theoretically storage could fill some portion of the
20 need, but probably not all of it?

21 MR. BERBERICH: I think storage actually handles
22 a different issue, Commissioner. We are going to be
23 faced, just to bring everybody up to speed, the Pacific
24 Northwest last year, or the year before, I don't
25 remember exactly, they run together, was faced with

1 fairly significant over-generation.

2 And over-generation is just as bad as under-
3 generation. If we let it occur and it got out of hand,
4 it would fry all the appliances in your home, and your
5 electronics, and that's generally frowned upon.

6 (Laughter)

7 MR. BERBERICH: So, we don't want that, either.
8 But when you have over-generation, you have to put this
9 power some place.

10 And when you have a lot, let's say we're in a
11 situation where it's been a hydro year, you have high
12 wind, you have base load on, and things like that,
13 you'll have over-generation conditions. And we see that
14 every once in a while.

15 It will be a place to put that power and then we
16 can use it again, later.

17 In addition to that, Commissioner, I think
18 particularly as it works with the renewables, wind in
19 particular, generating at night when we don't need the
20 power as much, and we can use it during the day, I think
21 that's a very powerful kind of outcome.

22 So, I think that's more along the lines of where
23 we'd use it. But, you know, Neil is right, it certainly
24 would help us deal with some of these integration issues
25 because they are -- they do work just like power plants.

1 Except, well, pump storage does.

2 CPUC COMMISSIONER FLORIO: Yeah.

3 MR. BERBERICH: A lithium ion battery doesn't.

4 COMMISSION CHAIR WEISENMILLER: Yeah. I think
5 my point is -- which we had a previous workshop on
6 storage and one of the things that's really important is
7 the ramp rate, and that varies across the technologies.

8 MR. BERBERICH: Yeah.

9 COMMISSION CHAIR WEISENMILLER: Obviously,
10 batteries can respond very quickly, but then they
11 discharge down.

12 MR. BERBERICH: Yeah.

13 COMMISSION CHAIR WEISENMILLER: So, if you're
14 looking at something that's a multi-hour thing, you've
15 got to bring something up if the battery, you know,
16 discharges itself.

17 COMMISSIONER PETERMAN: I'll just take this
18 moment to say that we have a number of audience
19 questions. One. As in, well, there's a number of
20 audience questions.

21 (Laughter)

22 COMMISSIONER PETERMAN: Maybe there will be
23 others. And just hearing this conversation, I'm mindful
24 that we get the opportunity to think about these every
25 day, and they're complicated, and they're pretty techy.

1 So, if you don't have an explicit question, but you just
2 didn't understand something, or you want a definition,
3 you can also ask for that.

4 I think this whole discussion really revolves
5 around the fact we're trying to get the same outcome,
6 electricity production, but cleaner, and we have to use
7 different inputs, and they're not direct substitutes.
8 And so you need some type of combination of them in
9 order to achieve the same outcomes.

10 And so we're talking about what those
11 combinations are and that there are different time
12 cycles for how quickly these new inputs can be
13 developed.

14 So with that, let's see what the one audience
15 question is and then we'll take it from there and, of
16 course, if there are more questions from the dais.

17 MR. BERBERICH: And, Commissioner Peterman, I
18 would also offer this that we're happy to answer any
19 questions at the break, out in the hallway as well.

20 COMMISSIONER PETERMAN: Oh, also mention that we
21 have had seven workshops already this year on
22 renewables. And ones in particular that relate to this
23 topic, there was one on June 11th related to integration
24 that had panels on storage, demand response, some
25 natural gas plants.

1 And there are transcripts from all of those
2 available online. We can put that information, make
3 that information available during the break. And
4 there's really a more detailed discussion of all of
5 these issues as a part of that forum.

6 Your question? Come to the podium, please, and
7 identify yourself for the record.

8 MR. DAVIS: I'm Ben Davis, Jr., thank you very
9 much for --

10 COMMISSIONER PETERMAN: Please speak a little
11 louder, sir. You're on, but you need to be able to
12 project.

13 MR. DAVIS: I can project. How's that?

14 COMMISSIONER PETERMAN: Yes, there you go.

15 MR. DAVIS: Ben Davis, Jr., thank you for
16 answering my questions.

17 If I understand correctly, this is the first
18 time I've heard any analysis of the summer of 2013 and
19 the operation without SONGS. It sounded like your
20 analysis considered that SONGS would not be operating in
21 2013.

22 If I understand correctly, Walnut Creek will be
23 operating by then, and (inaudible), and will cover more
24 than they've lost in their supply this summer, by
25 Huntington Beach.

1 And also provide the inertia and the location
2 that you referred to earlier. You said there were two
3 other operating plants that would potentially be
4 operating by then.

5 But what you said, although you didn't say this,
6 but seemed to infer that we'll be in even better shape
7 to operate without SONGS in 2013, than we are in 2012
8 with this contingency plan that you are moving ahead.

9 My first question and I would like you to
10 elaborate on a little bit more, is just whether I'm
11 correct about that. In 2013 you said -- you said we'll
12 be on the right side of the probability from 2012. Will
13 we be on the right side of the probability in 2013?

14 MR. MILLAR: No, I don't agree with you,
15 fundamentally. Because, first, there's considerable
16 load growth, we are needing to assess the load growth
17 both in the San Diego area, as well as in the Los
18 Angeles Basin area.

19 And while the percentage of load growth can be
20 relatively small, it's applied to a very large number of
21 significant load in the L.A. Basin area that the load
22 growth, alone, will create additional challenges in that
23 area.

24 Walnut Creek, which is where the air emission
25 credits are coming from, from Huntington 3 and 4, is a

1 slightly large plant. But the slight, the incremental
2 change nowhere near addresses the incremental load
3 growth that we need to address.

4 Also, the Walnut Creek plant, within the L.A.
5 Basin area, is much further north, it's not on that key
6 transfer path. So, in terms of supporting the flows
7 into San Diego, the Walnut Creek plant actually is of no
8 use, it does not support the transfer path through SONGS
9 and into San Diego.

10 So, for those reasons, alone, I have to disagree
11 with the premise.

12 We do need to look at what we can do for 2013,
13 we have to make good use of the year that we have to
14 sharpen the pencil on what the summer of 2013 will look
15 like and what additional remediation can be put in place
16 to be positioned for the summer of 2013.

17 COMMISSIONER PETERMAN: Mr. Davis, before you go
18 on, I've gotten notification that those on the WebEx
19 system cannot hear that microphone. So, you're going to
20 ask your question and I'm going to repeat it, so that
21 will encourage you to have a very succinct question
22 because I will shorten it either way.

23 So, please --

24 (Laughter)

25 MR. DAVIS: Yes, I trust your judgment in

1 shortening it. First, let me say I was not making a
2 statement. I was trying to ask whether or not you would
3 make that statement.

4 So, as far as disagreeing with my premise, we're
5 not disagreeing.

6 MR. MILLAR: Oh, okay.

7 COMMISSIONER PETERMAN: So, the question was
8 whether in 2013 we would be better positioned to operate
9 without San Onofre and then we heard the response.

10 MR. DAVIS: Or at least sounded right side of
11 the probability.

12 Now, are you -- as I'm hearing you, are you
13 saying you will not be on the right side of the
14 probability in terms of 2013?

15 MR. MILLAR: I'm saying that 2013, today, has
16 new challenges that we don't have to face in 2012. We
17 see a number of issues going against us.

18 We will be working through the next two months
19 to put the plan in place to understand exactly the
20 situation for the summer of 2013, and to land on what
21 steps we think we need to take to be positioned for the
22 additional challenges in 2013.

23 MR. DAVIS: But speaking in sensitivity, could
24 you answer that -- I was hoping for a yes or no answer.

25 But let me make this clearer. Yes, it is a

1 clear answer, but I'd love a yes or no answer, too.

2 The LAO, in analyzing the (inaudible) -- was
3 opposed to the nuclear power plants and asked that of
4 voters of California, said that passage of the
5 initiative would like cause rolling blackouts, costing
6 tens of millions of dollars to California in the
7 immediate future, and that includes 2013.

8 They used the term "likely". Now, given the
9 contingency plans that you said, where you said that
10 nothing was off the table, and I assume you mean that to
11 avoid rolling blackouts that you need to potentially use
12 Huntington Beach in there.

13 Will you use Huntington Beach if it is necessary
14 to avoid rolling blackouts, or not? And do you see the
15 LAO as correct that if we don't have San Onofre online
16 by 2013, there's a likelihood of rolling blackouts.

17 COMMISSIONER PETERMAN: So let me --

18 MR. DAVIS: And I'm looking for a yes or no
19 answer to that one.

20 COMMISSIONER PETERMAN: So let me repeat that
21 question and we'll let, of course, our speaker answer in
22 the way he would like to answer.

23 And the question is what's the likelihood of
24 rolling blackouts from our shutdown of our two nuclear
25 plants in the State?

1 MR. DAVIS: In the immediate future.

2 COMMISSIONER PETERMAN: In the immediate future.

3 I think we got the sense of it, but that's just to
4 capture it for the WebEx. Neil?

5 MR. BERBERICH: Well, Commissioner Peterman, if
6 I can take a stab at this.

7 COMMISSIONER PETERMAN: Sure.

8 MR. BERBERICH: Mr. Davis, the likelihood for
9 rolling blackouts is much higher with San Onofre out of
10 service. It's 2,250 megawatts. Let me let that hang
11 out there for a second, 2,250 megawatts.

12 Huntington Beach is 450 megawatts. A big gap.
13 A big gap.

14 You have a heavy load and major contingency on
15 the system, and major contingencies are transmission
16 lines that go out or power plants that go out. And I
17 can tell you this, I read our log every day across the
18 State, every night, every day transmission lines trip,
19 power plants go out.

20 Now, can I put a prediction on that? I can't
21 because I don't know exactly when that will happen.
22 And, unfortunately, I'm not good enough on weather
23 forecasting, either.

24 But I can tell you that you can't replace 2,250
25 megawatts of power with 450 megawatts of other power, so

1 it doesn't work.

2 And, also, Walnut Creek is, as what Mr. Millar
3 was trying to say, it's not electrically equivalent.
4 It's not -- Walnut Creek is not in a spot that provides
5 voltage support.

6 But here's the -- but let me get to more of a
7 different premise. We are going to -- we are in the
8 process, we don't have our 2013 planning results done,
9 yet, we're still working on that. So, we're a bit
10 premature in actually saying exactly what the conditions
11 will be. But all of them will be fairly temporary
12 things.

13 This State can decide not to have nuclear
14 plants. The State can decide that. But across the
15 State, then, at some place between four and five
16 thousand megawatts, the State cannot currently operate
17 without those four and five thousand megawatts without
18 significant threat of rolling blackouts.

19 To do that, which you can think about doing,
20 we'll have to build additional transmission into these
21 local capacity areas, principally into the L.A. Basin
22 and San Diego, significant transmission that would have
23 to bring in 2,250 megawatts of power. And you would
24 also have to build generation.

25 Now, that generation would likely have to be

1 thermal generation and that's going to have air emission
2 impacts. And right now there are no -- Mr. Smitherman
3 will be here later today and he can speak to the
4 availability of air emission credits. It's my
5 understanding there are no more emission credits.

6 So, that's a bit of a longer answer.

7 COMMISSIONER PETERMAN: And so we're going to
8 stop here because we have public comment at noon. And
9 I'll ask that for the public comment we'll replace that
10 microphone so that someone can speak freely and I don't
11 have to repeat it.

12 And to keep us on schedule we're going to move,
13 now, to our next panelist. But you're free to come back
14 in the public comment period, as well.

15 MR. DAVIS: Well, I won't be leaving. But I
16 realize this is -- I will limit myself to questions.
17 But I appreciate the clarity of your answers. And there
18 is a little more follow up I'll want to do at that time.
19 Thank you very much.

20 COMMISSIONER PETERMAN: Thank you.

21 So, now we'll turn to our next -- yes, our next
22 panel. So, those who are on the panel please come up.

23 MS. KOROSSEC: Actually, no, they're not seated
24 at a panel, we're taking speakers one at a time.

25 COMMISSIONER PETERMAN: Okay, we'll be taking

1 you one at a time.

2 MS. KOROSEC: We'll give you a moment to get
3 things pulled up here.

4 COMMISSIONER PETERMAN: And you can sit wherever
5 you like, but just be ready to come up.

6 We'll start with Mike Tollstrup. And, Suzanne,
7 will you work on that central microphone, please?

8 MS. KOROSEC: Yes.

9 COMMISSIONER PETERMAN: Thank you.
10 Again, if you'd like to make public comment,
11 there are blue cards available. Lynette, where are the
12 blue cards?

13 There are blue cards available over here to your
14 right. If you'd like to make a public comment, we'd ask
15 that you keep your comments generally to three minutes,
16 to allow time for everyone to speak. And we'll be
17 taking those at noon. Thank you.

18 MR. TOLLSTRUP: Okay, good morning, thank you
19 for having us here today.

20 We're going to give an update on where we are
21 with respect to the electric reliability and offsets
22 need assessment analysis that we're doing under AB 1318.

23 We're going to basically tag-team this
24 presentation today. I'm going to provide an overview
25 and an update of where things are, and then the process

1 going forward and what it's going to take to wrap this
2 up, and when we expect to have the final results of this
3 study.

4 So, I'm going to do that part, then we're going
5 to follow up with the two balancing authorities and
6 we've got Cal-ISO and LADWP. They'll talk in more
7 detail about the scope of the analysis that's being done
8 and where that process is right now.

9 So, just as a little background, AB 1318 was
10 signed back in February of 2009. It required the Air
11 Resources Board to work in consultation with the
12 California ISO, with the Energy Commission, the Public
13 Utilities Commission, the State Water Quality Control
14 Board and also, it's not up there, but LADWP as well,
15 since they're a separate authority, to develop this
16 report that addresses two things.

17 The first is the need for capacity in the South
18 Coast Air Basin that provides for long-term grid
19 reliability. Once we get that element or that part of
20 it done, if it identifies additional capacity that's
21 needed, then the second part of it is that we work on
22 recommendations that would address the need for offsets
23 and help these projects to move forward into the future.

24 And then, of course, we have to report our
25 findings to the Governor and the Legislature for their

1 consideration.

2 So, like I mentioned, we have numerous agencies
3 that are involved in this. The Air Board is not an
4 energy agency, so we kind of got stuck in the lead role
5 on this. We're kind of acting as the project manager.
6 So, we're coordinating the effort of the multiple
7 agencies.

8 We do have one significant part of this and
9 that's dealing with the offset issues, if that becomes
10 necessary when we get the needs part of it done. And we
11 also will serve as the liaison to South Coast since they
12 have primary authority that will deal with that offset
13 side of the question.

14 Cal-ISO and also LADWP, they're responsible for
15 the bulk part of doing the power flow studies and the
16 modeling that needs to be done for the needs assessment.
17 They're doing the bulk of the work on that.

18 The Energy Commission and PUC are serving as the
19 technical advisers, they're providing inputs into the
20 models. You know, the data support, basically. They're
21 also, you know, the technical eyes and ears on the
22 results and working on reviewing the results of those
23 models, and coordinating that as well.

24 And then, of course, the Water Quality Control
25 Board, their interest lies with the once-through cooling

1 facilities and how our efforts impact that.

2 So, activities to date; we had our first kickoff
3 meeting back in November 2010. We released a draft
4 outline, a work plan back in January 2011.

5 We had a second workshop in 2011, we did that
6 jointly with the CEC under the IEPR. And, you know,
7 from that date forward we've been continuing to work on
8 the modeling, and the flow analyses, and results to get
9 that part of the work done.

10 This is kind of our excuse for why it's been
11 taking so long but, you know, it has really -- it's been
12 a huge coordination effort and it's we're coordinating
13 multiple agencies between energy and environmental.
14 It's taken a lot of work to get there.

15 We all have common goals, but we have competing
16 priorities and so we've had to coordinate that in order
17 to make this move forward.

18 We're also working with two different ISOs,
19 we've got Cal-ISO and the LADWP, two different areas, so
20 we have two different studies that are being done. And
21 we've had to coordinate the work on that so there's some
22 consistency between the assumptions and, ultimately, how
23 the results come out.

24 And then, of course, you know, there's been a
25 lot happening, major changes in the electric industry

1 with once-through cooling, with the 33-percent renewable
2 program and AB 32.

3 It's provided a lot of uncertainty and it's
4 certainly made it complicated in doing the long-term
5 planning portion of this report.

6 One of the other big issues that we face is the
7 methodology for doing the long-term analysis. The tools
8 that are available aren't typically used to go out
9 longer than, you know, four or five years. We've run it
10 out as far as we thought it could go and that's a ten-
11 year span.

12 So, when the results of the study come out,
13 we're doing an analysis out, basically, to 2021.
14 And we think, you know, based on the tools we have
15 that's the best we can do at this point in time.

16 And then the last part is that we've had, you
17 know, a lot of the folks that are working on these
18 analyses have been committed to other projects that are
19 equally important, so we're trying to balance the time
20 on those and make sure that we continue progress going
21 forward.

22 So, the scope of this study, basically, like I
23 mentioned, it's going to go out and look at grid
24 reliability out for ten years, out to 2021, in the South
25 Coast Air Basin.

1 We're looking at basically a range, so
2 implementing various degrees of demand side management
3 programs. Every scenario that we do includes a 33-
4 percent renewable because that is a mandate.

5 We're doing local and zonal assessments so that,
6 you know, at the end what we hope we can do is say with
7 some certainty that we need megawatts in a certain area,
8 pin it down as much as we can for working with the
9 offset issues associated with it.

10 Also, I think, two things that we're doing. The
11 first part was, and it's been talked a little bit about,
12 looking at how much the once-through cooling capacity
13 needs to continue on, how much of that needs to be re-
14 powered or replaced in order to maintain local
15 reliability.

16 The second part of that is looking if we need
17 additional resources or additional fossil fuel to firm
18 up the increase in renewables, as the increase in
19 renewables goes up over time.

20 And then the other part of that will be, again,
21 depending on the outcome of that needs assessment
22 analysis, looking at the need for offsets, you know,
23 closing that gap between demand and supply, working with
24 the local district and other stakeholders to make sure
25 that if we identify additional megawatts, we have a way

1 of making sure that it can move forward and get them
2 online.

3 So, today we have completed a number of portions
4 of the analyses. A lot of these are still undergoing
5 internal review. So, we've done the local capacity
6 analysis. Regional requirements has also been completed
7 and is under review.

8 The one piece that we don't have, yet, and we
9 hope to have within the next couple of weeks, is the
10 renewables integration.

11 And then once we get these all together we'll
12 combine those with -- you know, kind of summarize it in
13 the results and be able to present it, you know, to
14 folks and share what our findings are.

15 A number of these things are available now, you
16 can get these. And there's not a lot you can do with it
17 unless, you know, you've got a significant background in
18 electricity.

19 But that's one of the things we will be doing is
20 kind of putting that in a format that folks can
21 understand and that we all agree on.

22 So there's a couple of things that we've learned
23 so far. One, we know that we will need to repower or
24 replace a number of the OTC plants. So, that will vary
25 depending on what the outcome is, how much demand side

1 management, how much some of the other programs take
2 place. But we will need that capacity. Not all of it,
3 but we will need a considerable amount of it.

4 You know, demand side management programs will
5 reduce the amount of OTC that's needed, depending on how
6 much is implemented, how much is proven dependable. You
7 know, that can impact ultimately where this goes.

8 And then the obvious is that the transmission
9 generation system is highly complex, the assumptions
10 that you make going in impact the outcome of the
11 results.

12 So, we will be presenting a range of outcomes
13 based on assumptions going in. We'll be sure to explain
14 our assumptions. But it does impact what will be needed
15 in the future, what that future looks like in the South
16 Coast Air Basin.

17 And then, you know, the other part, once we get
18 that, we will need to do the offset assessment. We know
19 there will be some re-powers, replacements of the OTC
20 facilities. There may or may not be a need for new
21 generation. But once we get the results of the study we
22 will be working closely with the South Coast and other
23 stakeholders to identify recommendations going forward
24 that would end up, ultimately, in the report.

25 And so this is kind of where we are on the

1 schedule. We expect to have the renewables integration
2 piece in the next few weeks. We're hoping to pull that
3 together and get our summary available, you know, within
4 relatively short order after that.

5 We do plan on briefing the South Coast before we
6 go out publicly, but once we do that then we plan on
7 having a public workshop sometime in the July/August
8 time frame. We think we're on track for that, it looks
9 pretty good at this point in time, so we're pretty sure
10 we can get the July/August time frame for that next
11 workshop, with the results.

12 Following soon after that we hope to issue the
13 draft report and once we get that out on the street, and
14 give folks a chance to look at that, then we will do --
15 once again we'll do a public workshop and invite
16 comment.

17 And then, hopefully, if all goes well, we'll get
18 the final report out to the Governor's Office sometime
19 in the late fall. That's an optimistic goal, but we
20 think at this point we can probably do it.

21 So, for those that are interested, we do have a
22 list serve. We encourage you to sign up so you get
23 noticed of the workshop, and then as we get information
24 available we'll make it available to folks. We will
25 notify you about coming workshops.

1 And with that, if folks have questions, I'd be
2 more than happy to answer them.

3 COMMISSIONER PETERMAN: Do we have any quick
4 questions up here from the dais? We've got two other
5 speakers as part of this session.

6 CPUC COMMISSIONER FLORIO: Just a quick question
7 on the offsets issue. I fear the answer's going to be
8 no. Could we assume that if the capacity that is
9 required to replace the once-through cooling units is
10 less than the capacity that's already there, that we
11 will be okay from an offset perspective, or does it
12 really have more to do with the quantity of generation
13 as opposed to the megawatts of capacity?

14 MR. TOLLSTRUP: I think it's much more
15 complicated than that, and I think it's an issue that
16 we'll need to work and discuss with the district on
17 repowering, and how that's done under their existing
18 program.

19 COMMISSION CHAIR WEISENMILLER: If you -- these
20 cases all look at the case with San Onofre in.

21 MR. TOLLSTRUP: Yeah.

22 COMMISSION CHAIR WEISENMILLER: And so if
23 someone were to decide to go back and do it without San
24 Onofre, aside from getting gray hair out of that, do you
25 have an estimate of time?

1 MR. TOLLSTRUP: Well, that probably should go to
2 either the ISO staff or even Energy Commission staff on
3 how long it would take to turn that around.

4 You're right, the analysis that we've done so
5 far does not consider San Onofre going down. We're
6 hoping to at least get this part of it out of it as soon
7 as we can, this part of the analysis done.

8 And then if the analysis, the additional
9 analysis shows that there may be some issues, then
10 wrapping that in at a later date with an update.

11 COMMISSION CHAIR WEISENMILLER: Yeah. Okay,
12 thanks.

13 MR. TOLLSTRUP: Okay.

14 MS. KOROSEC: All right, next we have Neil
15 Millar back again to talk more about ISO.

16 MR. MILLAR: Thank you. So, in this
17 presentation I'll just touch briefly on the kinds of
18 studies that were done. I think the topic's already
19 been very well covered as to where the study program is
20 going and when the results will be getting rolled out.

21 But the package material does provide the
22 overview of this material. I'll just touch briefly on
23 it to explain what's in the content, more than trying to
24 explain the content, itself.

25 So, we have done the long-term local capacity

1 requirement studies, sensitivity studies with additional
2 incremental uncommitted energy, and combined heat and
3 power.

4 We've also done studies that focus on how much,
5 with the generators that we've identified, is re-powered
6 resources, how much energy would actually have to come
7 from those plants under the study assumptions.

8 And we've also done the transient stability
9 analysis to ensure that that system would actually
10 function. That it's more than just the loads and
11 resource balance, that it's electrically operable as
12 well.

13 Now, the good news for us in doing this analysis
14 was that it layered very heavily on the other OTC
15 analysis. It just opened to a bit more detail for the
16 L.A. Basin area.

17 The requirements, just reiterating what was said
18 earlier, we studied a range of generation scenarios
19 looking at different portfolios of renewable energy.
20 And we also did this additional mid-net load scenario
21 looking at the impacts or implications of incremental
22 uncommitted energy efficiency, really, as a guidepost to
23 help set the direction for what those other programs
24 could produce.

25 These results are basically striped out of the

1 earlier report that I was talking about, focusing on
2 capacity requirements.

3 And then the additional sensitivity, we've
4 provided the numbers here, if anyone cares to go into
5 that level of detail, about the additional incremental
6 resources that were studied.

7 Now, for people tracking the information on
8 this, we did post an update to our sensitivity
9 assessment. The original analysis was all documented in
10 our -- on the capacity requirements, was documented in
11 our 2011-12 annual transmission plan.

12 We have posted on our website an addendum that
13 provides an update, adding additional energy efficiency
14 amounts, addressing a few modeling issues that came up
15 as we were going through a bit more detail.

16 And if anyone is interested in following that
17 work, you should be aware of the sensitivity results
18 that have been posted.

19 Now, the other part, and I think this tags off
20 of a question that was asked earlier, was how much would
21 we expect these units to run, how much, what were their
22 energy output be?

23 To do that we did take what we considered a
24 reasonable scenario for re-powerment. We deliberately
25 chose the conservative side of selecting the most

1 effective locations for repowering.

2 And then modeled some very generic flexible
3 resources, but a combination of combined cycle
4 generation and simple combustion turbines to come up
5 with that assessment.

6 And did the production simulation analysis,
7 that's an analysis that actually looks at dispatching,
8 simulating a dispatch through an entire year and making
9 an assessment of how much energy would have to come from
10 those units.

11 So, that is an added step that we took to
12 provide the Air Resources Board that information.

13 And then at the end of it all took those results
14 and did all of the technical analysis to make sure the
15 system would actually work, that we haven't -- we have
16 sufficient inertia and sufficient capability that the
17 system will work on a 24/7 basis.

18 That included also studying light generation
19 portfolios, assuming high amounts of distributed
20 generation, to make sure that we had a fair degree of
21 comfort that those assumptions would provide a workable
22 system.

23 In terms of the results, themselves, they've now
24 been bundled up and passed along to be included in the
25 review process and as we move forward in developing the

1 final reports.

2 So, that's a very quick overview, but I think
3 most of the high level material's been covered earlier.

4 MS. KOROSSEC: Next, we have Dr. Mo Beshir, from
5 the Los Angeles Department of Water and Power.

6 COMMISSIONER PETERMAN: As we're hearing these
7 presentation I was -- I think in the first presentation
8 there was an overview of what AB 1318 is.

9 But just in case it wasn't clear, in short it
10 was legislation that was passed that said we had to
11 study what the local reliability is, and capacity needs
12 are going to be particularly in the L.A. area. And
13 that's why you have multiple agencies a part of that
14 study process.

15 And the process is not done, but we're getting
16 updates now about what each agency is doing.

17 DR. BESHIR: Thank you. Thank you for giving me
18 opportunity to comment and speak with you about the
19 LADWP's participation in these studies.

20 I guess a good number of some of the assumptions
21 and some of the work which went into the studies was
22 talked by Neil, so I don't really have to repeat a lot
23 of those things.

24 But I just want to first talk about LADWP and
25 some of the challenges and some of the things we've been

1 working on for quite some time.

2 So, this being an infrastructure workshop, I
3 thought maybe I will talk about the LADWP
4 infrastructure. That includes not only the OTC class,
5 but we have other infrastructures as well.

6 So, just overall our service territory, I guess
7 we are in the LADWP service territory today. So,
8 welcome, I hope we keep the light on for you throughout
9 the conference here.

10 Our service territory is L.A. City, 465 square
11 miles. And we do have also a small service territory up
12 in the Orange Valley. We do have 25 gigawatt hours of
13 annual sales and it could be that we have a pretty large
14 service territory and customer base.

15 We do have pretty extensive transmission, as was
16 mentioned earlier about transmission. We do have pretty
17 large in comparison to the size of our load. We have,
18 we do say about 28 percent of California transmission.

19 We have a pretty large transmission, including
20 DC, not only AC, but DC transmission as I will mention
21 later.

22 Our distribution is pretty extensive as well,
23 well-built distribution system. We have stations, 20
24 stations and all types of distribution, underground and
25 overhead distribution system.

1 We are vertically integrated as well, unlike
2 maybe that's -- which means we own our generation,
3 transmission and distribution.

4 So, from a planning and resource location point
5 of view, we do manage all three systems together from a
6 perspective.

7 For the purpose of the discussion here, we have
8 four large steam, thermal generating plants in the
9 Basin. Three of them are coastal plants. And within
10 the three coastal plants we have nine OTC units.

11 Of course, as you know, most of these coastal
12 plants have been here as long as L.A. has been around
13 and the whole system, L.A. system is built around these
14 generating plants.

15 So, the generating plants, historically and
16 technically, they provide energy to take it to solar
17 centers in the mid, in the downtown area, as well as in
18 the Rosen Valley area. So that is a structure and the
19 infrastructure is set that way.

20 Most of our transmission grid, as we call it
21 transmission grid, is interconnected into our -- mostly
22 our northern part and it is outside what we call our
23 local capacity requirement area. And we'll define that
24 shortly, what the local capacity requirement area for
25 LADWP is.

1 So, this is an electrical presentation of LADWP
2 service transmission network within the system. And the
3 far right, as you can see that I just used a little
4 circle you can see.

5 And within the left-hand side, the green circle
6 is what we call the local capacity requirement area.
7 And, essentially, that is we need to bring enough
8 generation resource within that pocket to be able to
9 serve our load for the different conditions we're going
10 to be discussing.

11 And this is, even though we have been looking at
12 requirement and reliability issues, this concept talking
13 with local capacity requirement to us, a discussion and
14 further adaptation of what Cal-ISO methodology has been
15 in looking into this issue.

16 So another concept from our resource point of
17 view, I don't have to do all that too much. But as you
18 can see, we have we have really large commercial load
19 and we have also residential, as you can see.

20 Our capacity, pretty large capacity today is
21 gas-based and pretty much all of that is, as you can
22 see, it really is in the Basin.

23 And we do of course have also hydro coming from
24 our pump storage facility, as well as our Hoover
25 generation, as well as we do have coal assets from

1 outside the California.

2 So, that's been the kind of basic understanding.
3 We do have -- we do have, as a mandates, we are working
4 on in addition to the OTC, and that's also making our
5 system reconfiguration and the many things we are doing
6 within LADWP.

7 As I mentioned, our once-through cooling and
8 there is an issue with the mandate with re-powering our
9 once-through cooling. And this one is mandates, we have
10 the Southern California Air Quality Management District
11 as part of our -- you know, as part of our work
12 agreement we are re-powering our Haynes 5 and 6 units,
13 and with the timeline shown. And we have started three
14 we are also re-powering in the time of 2015.

15 We're also working on the 33-percent RPS,
16 eliminating the SB 1368. Essentially, we have a very
17 aggressive program on eliminating our coal,
18 individually, working through our asset coal assets in
19 Utah.

20 Local solar power, SB 1, SB 32, and AB 32, all
21 of those are mandates which are really helping us
22 reconfigure and transform our system. And we do feel we
23 would be reconfiguring about 70 percent of our system in
24 the next century, I would say, with all the mandates.

25 So, meeting those mandates, as you know, is not

1 really done haphazardly, so we do have really extensive
2 planning process through our integrated resource plan,
3 similar to what the CEC is engaged in through the long-
4 term planning process.

5 And as a planning process, of course, we have to
6 line up our projects, we have to line up our
7 expenditures, and that includes converting our coal,
8 eliminating -- doing renewables, energy efficiency, and
9 many other things we have to do with our OTC plants as a
10 part, as well.

11 So that is all of the issue. Considering with
12 all these mandates we have to meet, we have pretty
13 extensive expenditures going forward.

14 As you can see, today we have close to maybe \$3
15 billion expenditures and over the next 20 years you can
16 see that really over-doubling going forward, and to meet
17 all those expenditures, all of those mandates that we
18 have to meet, including the OTC we have to do.

19 With regard to our OTC plants, this is a part --
20 this is a timeline and this is an agreed upon timeline.
21 We are working on Haynes 5 and 6, the repowering of them
22 and reconfiguring them.

23 And early on you did hear about some of the
24 things which is really cool things that we could do with
25 some of the new technology we have. And we are engaging

1 that in with this reconfiguration of our plants.

2 With the Haynes, we are replacing that with six
3 combustion turbine peakers, we call them G100s. They
4 have the features which is going to help us integrate
5 our renewables a lot more clearly and smoothly.

6 And we also heard from Neil, earlier, talking
7 about some of the clutch aspect. It's not feature,
8 clutch aspect is not really a feature. We have -- all
9 our plants will have a clutch arrangement where we can
10 clutch them so that we can convert them to synchronous
11 condensers on the fly, so that we can help us with our
12 voltage support.

13 So, we are involved in providing all the
14 technology, which is really going to help us with our
15 renewable integration process, as well as meeting our
16 OTC requirement.

17 But this is a timeline and we do feel we can
18 meet this timeline, and we're working through this
19 timeline by 2015. After we completed our Haynes and
20 started repowering, we feel we will be a 56 percent
21 reduction in the OTC and 100 percent by the completion
22 of this program which is 2029.

23 So, we are committed to this concept and to the
24 OTC program.

25 To go back, I guess come back to the key

1 concepts going forward is the work we've been engaged
2 in, analyzing and doing a study on this AB 1318. We are
3 working hand-in-hand with Cal-ISO, and CEC, and ARB. We
4 have had many, various discussions.

5 So, one of the things we first need to agree on
6 is that the assumptions and the study methodology.

7 So, for all practical purpose we are using the
8 study methodology Neil talked about, with regard to how
9 we make assumptions, what kind of system cases we use,
10 and how we go about doing mainly on a reliability
11 analysis basis. We follow all the NERC, and WSCC, and
12 some of our internal reliability requirements.

13 So, given that, the first aspect of course is
14 for this to make an assessment to really to define what
15 we call the local capacity requirement area.

16 So as I mentioned earlier, the local capacity
17 requirement area for us is pretty distinctly identified
18 here, which includes the load and generation within that
19 window, always in that circle. It essentially,
20 physically is all the resources, generation and load,
21 south of our valley area, which is what we call Rinaldi
22 Station.

23 So, the reason that the local capacity
24 requirement area study, essentially the identification
25 is within that load, as a way we're going to have to

1 meet that way is with the generation within that load,
2 and on import coming to that load center.

3 So, that is kind of the definitional
4 consideration of the LCR and that is consistent to how
5 we have done it with the work we have done.

6 And another definitional issue is we have to
7 agree on what the methodology and, not only methodology,
8 but the base cases. What timeline, what year are we
9 going to study?

10 And as was said earlier, was not good enough to
11 look at next year, year after, but we have set out what
12 we call a planning horizon, which is a ten-year planning
13 horizon. So, we work on the ten-year planning horizon,
14 which is 2021.

15 Not only is that for our what we call LCR, there
16 are two cases which are really making the difference.
17 Because, as you probably seen earlier, our system, there
18 is an injection coming from the Pacific DC intertie, and
19 another injection coming on the AC lines.

20 How those two systems share that energy or that
21 power coming to that LCR really matters and that's what
22 the definition and the distinction we have to analyze.

23 So that's why you see case of 600-megawatt
24 import, or 3,100 import or coming in on the DC, that's
25 kind of two additional cases.

1 Then we have, also, based on the study plan
2 coming from as part of the agreed-upon plan, we have
3 what we call high load case and we call it low capacity
4 or mid-low cases.

5 So, those are the studies we have done for the
6 2021 -- I'll just give you a highlighted short results,
7 I think the idea is we're going to have a separate
8 discussion another day, on a workshop, to really go
9 through all the details on these analyses.

10 But from what we have -- our analysis show today
11 is, as you can see, the capacity, the LCR load was
12 6,226, the generation was in the bucket or was in that
13 area is 3,386 megawatts. That is a little lower than
14 our total OTC plants in the basin, including on our gas.

15 Then for that study, for 2021, using the one as
16 a cases -- if you remember, from Neil's analysis, there
17 was a discussion of four different portfolios, with the
18 environmentally constrained, that was the ISO based, and
19 also there was an economically constrained scenario.

20 We've agreed to use a trajectory because as an
21 environmentally constrained, as you heard it earlier, it
22 has some aspirational issues which we're not really
23 willing to agree, and take our system through that
24 process.

25 So, that study is based on the trajectory case

1 and based on that we do see some limitations in our
2 system meeting -- and meeting our load. In fact, to
3 make the system work and stabilized, we have to add some
4 kind of load shedding.

5 I know Neil talked about load shedding, and the
6 load shedding concept. Load shedding, essentially, is
7 dropping customers' load. So, really, that would -- we
8 really have to resort to those kind of actions, really,
9 in order to stabilize the system to meet those kind of
10 level of load and resources for the studies we have
11 done, based on the assumptions.

12 MR. BERBERICH: If I might?

13 DR. BESHIR: Of course.

14 MR. BERBERICH: There was a question earlier
15 about load shedding. Load shedding is blackouts, lights
16 are out. So, I just wanted to clarify that's what
17 you're talking about.

18 DR. BESHIR: Good. Very good, thank you.

19 MR. BERBERICH: And they don't have those in
20 L.A.

21 (Laughter)

22 COMMISSIONER PETERMAN: And, Mo, I appreciate
23 the detail you're providing. So that we have time for
24 questions for you, as well as for public comment, I'm
25 going to ask you to speed through quickly the rest of

1 your slides, as we're running past time.

2 DR. BESHIR: Very good, I will do that.

3 COMMISSIONER PETERMAN: Thank you. And you can
4 direct us to the website where this information is as
5 well.

6 DR. BESHIR: Sure, thank you.

7 COMMISSIONER PETERMAN: Thank you.

8 DR. BESHIR: Okay. So, in fact, I don't have
9 really too much to go, except maybe I just go in
10 conclusion.

11 I just wanted to really address the 2029 OTC
12 program we have. We think it is really very solid
13 program and anything more or less I think we think is
14 really unachievable, and we do see that is the way to
15 go.

16 We do have issues, we think, with transmission.
17 Transmission, we don't think it's really going to solve
18 our problem in these particular conditions.

19 As you know, we have transmission big, we do
20 have a lot of transmissions here and we know how
21 transmission work, and we really like to work
22 transmission to solve our problem.

23 In these particular cases we don't think that
24 really transmission is going to really help us solve all
25 of our problem.

1 In addition to this thing, the generation, you
2 have understood there's a voltage issue. We also have
3 extensive voltage studies and voltage analysis we do to
4 take care of our system.

5 But I just want to leave you with the last
6 bullet there where I think the uncertainties which,
7 really, are always with us, as we can see with the
8 nuclear power issue. And also with the recent study
9 coming out from UCLA, really, the assumptions we're
10 making is really not good, you know, because all the
11 study area is basically one intent.

12 And what the UCLA study shows is that may not be
13 good enough for our assessment. And as a load, we are
14 assuming high load conditions means we need more
15 generation in our system.

16 So, with that, thank you very much.

17 COMMISSIONER PETERMAN: Thank you. As we turn
18 to public comment, first let me say that anyone who will
19 be providing public comment will need to come to this
20 table in front of me to use this microphone.

21 Because the microphone that's picking up for
22 those listening online is actually behind me so,
23 therefore, you need to be a bit closer.

24 But before I start calling the names of people
25 that have submitted cards, let me ask if there are any

1 local, or State officials, or representatives who wish
2 to offer any comment or ask a question? I did not
3 mention this in the beginning and I was remiss in doing
4 that.

5 Anyone? Yes, sir, please come to these tables
6 in front of me.

7 And then just so you know you're about to be
8 called, Barbara George, representing Wind as Energy
9 Matters, you'll be the first person providing public
10 comment. Thank you.

11 MR. BRAND: Hi, my name is Bill Brand, City
12 Council Member for Redondo Beach.

13 COMMISSIONER PETERMAN: Welcome.

14 MR. BRAND: First, I want to thank you guys for
15 having this workshop, it's really, really helpful. And
16 for those of us who are trying to get up to speed on all
17 of this, it was great that you came to Los Angeles.

18 Redondo Beach is the home of the AES Power
19 Plant. They're submitting a license application soon to
20 the Energy Commission, to re-power a portion of their
21 plant. The public is very much against the idea of a
22 new power plant here. There's several reasons. I'm
23 most concerned about air pollution.

24 Their preliminary plan, 500 and change megawatt
25 re-power will increase depending on their operating

1 profile. Their particulate emissions are anywhere from
2 five to 17 times the average of the last five-year
3 emissions for particulates from that plant.

4 So, the health hazard to what has become a very
5 densely populated area is going to be very significant.

6 So, we've been watching very closely, obviously,
7 the once-through cooling needs. First and foremost my
8 concern, and everyone else's concern, is that the lights
9 don't go out. You know, really, and from the study --
10 I've been studying this, and it's really, actually,
11 going back to when I first was advocating for the once-
12 through cooling legislation to improve the marine
13 environment. Switched to examining the load
14 requirements and that the lights will not go out. And
15 coming quickly, not quickly, but over the long term the
16 conclusion that there is capacity, as many of you have
17 said today, to retire a once-through cooling power plant
18 in the L.A. area, western sub-area.

19 So, I think that should be Redondo Beach. It's
20 surrounded by what we call incompatible uses, including
21 a senior living home, 13,000 residents per square mile.
22 You know, it goes on and on.

23 And I could go on and on, but that's kind of the
24 conclusion I've come to over several years of studying
25 this.

1 And they'll be filing an application soon.

2 Everyone on our council, and the mayor as well, has
3 expressed that this is no place for a new power plant.
4 So, you know, and San Onofre, obviously, is huge.

5 And like I said, our number one cause or concern
6 is that, you know, the grid reliability is maintained.

7 So, I guess with that, thank you for your time.

8 COMMISSIONER PETERMAN: And thank you for being
9 here. And I imagine that this Commission will be
10 participating those proceedings as well, so appreciate
11 your attention to the issue.

12 MR. BRAND: Would Mr. David Freeman like to
13 speak next?

14 Are there any other representatives from any
15 local city agencies that wish to speak?

16 I'll also alert everyone to the fact that we
17 will have a public comment period at the end of the day
18 as well.

19 MR. FREEMAN: I was here today to listen and
20 learn, but as I heard the gentleman from the ISO speak,
21 I couldn't help but remember that Commissioner Florio
22 and a number of us put together the ISO, what was it, 12
23 years ago.

24 And it was created by the Legislature primarily
25 as a result of path 15, where we had blackouts because

1 we could not move -- we had plenty of power in
2 California, but we couldn't move it from Northern
3 California to Southern California.

4 And the fundamental idea and the general thought
5 was that the utilities thought of transmission as a
6 step-child, it didn't -- it wasn't exciting like
7 generation and they didn't pay enough attention to it.

8 And so the idea is that if we ask the utilities
9 to pull the transmission and created the ISO, that we
10 would create a transmission grid in California where we
11 could move electricity from any place in the State to
12 any other place in the State.

13 And I remember specifically, I was the trustee,
14 and all I had to do is listen to Mr. Florio, and my
15 other advisers, and do what they said and I wouldn't go
16 to jail, so I kind of listened to them.

17 And we filed a tariff with FERC before the ISO
18 board was formed, even, because we had a deadline. And
19 in that tariff I remember, clearly, that we had
20 provisions that if no -- that we would have an annual
21 review of transmission plans and if the utilities and
22 others were not building transmission sufficiently to
23 move power from any one place to any other place, that
24 the ISO, itself, had the authority to get the
25 transmission lines built.

1 That -- how can we be here, in 2012, just
2 because one power plant, San Onofre is down, that people
3 are talking about the possibilities of blackouts. A
4 possibility that I think, because of the initiative of
5 many people here, is going to be avoided because we
6 learned in 2001 that with our 2020 program, and with a
7 real call for efficiency and conservation, both, we
8 ended the blackouts. And we had no blackouts in 2001.

9 But my concern on the long-term view on
10 transmission in this State is what happened to the grand
11 idea that we created this agency not just to operate the
12 grid, which the utilities had not done a bad job of
13 before the ISO. We hadn't had any blackouts until -- in
14 this State until Ken Lay and these guys took us to the
15 cleaners.

16 But I'm just -- I just personally feel a sense
17 of embarrassment that we have let a situation go where
18 we put too many eggs in a nuclear basket there, in one
19 part of the State, and not built sufficient transmission
20 so that when it goes out, as it has and as every power
21 plant does from time to time, usually when you needed
22 them the most, because metal is stressed the most when
23 it's real hot or when it's real cold. But why are we
24 sitting here today without adequate transmission to move
25 power freely in the State of California?

1 And until you answer that question, looking at
2 the next 10 or 15 years remains a question mark,
3 especially when we're now focusing on building new
4 energy sources in remote places, where there isn't
5 transmission.

6 And of course we've done some and some is being
7 built. But the idea that we're relying on Adam Smith or
8 his uncle to propose the transmission lines that are
9 needed to reach the 33 percent, and the Governor's
10 excellent idea of going to 40 percent and beyond is not
11 there.

12 The other comment I'd like to make is why isn't
13 storage at the center of your discussion today? I mean
14 we all know that -- you know, even when the Governor was
15 Attorney General he introduced legislation for five
16 percent storage on a voluntary basis.

17 But if we don't realize that we've got to build
18 and pay for a very large amount of storage capacity,
19 then the idea that we are going to lead the civilized
20 world toward a clean energy future has got a hole in it.

21 And so I'm -- those are the two, actually. The
22 third is that we're not telling the world that renewable
23 energy is a here and now product. We're allowing the
24 oil industry and others to kind of paint it as, you
25 know, here's to solar power, it's going to be our

1 future. It's in the future and it always will be.

2 That's kind of the propaganda that's being laid.

3 I talk to people in the east, where I live at,
4 they don't believe that solar and wind is real.

5 Whereas one day, recently, my friend from DWP
6 just told me on one Sunday they were running all their
7 renewable power and they didn't need their coal plant,
8 that the power system was running mostly on renewable
9 energy.

10 You know, consider Texas. One day in March 23
11 percent of all electricity was wind power. This is
12 happening, but nobody outside of this room knows about
13 it.

14 And the world needs to hear that we are
15 succeeding and this is a here and now thing.

16 And I'm not sure that Mother Nature has cut a
17 deal with us that we could wait until 2020, or 2025, or
18 2030 to start cutting down on coal production in the
19 State.

20 We've got all kind of programs in this State
21 that makes it look like things are getting down, but
22 have we reached 20 percent renewables in the State of
23 California? No.

24 The DWP reached 20 percent the year I was there,
25 but it reached 19 percent the next year. That's not the

1 right direction. And I think if you do a look of
2 checking up on the investor-owned utilities, I don't
3 think either one of the big ones has reached 20 percent,
4 yet.

5 So, a good -- the future is determined much more
6 by what we do today than what we plan for tomorrow. And
7 I think there's a need for a much greater sense of
8 urgency about the pace at which we are moving.

9 I mean, a beautiful cap and trade program that
10 doesn't have any bite to it until six or seven years
11 from now is cutting a deal that I don't think Mother
12 Nature has agreed to.

13 And I think it's important that we generate a
14 greater sense of urgency about what we get done this
15 year. You know, planning is necessary, but totally
16 insufficient.

17 Thank you.

18 COMMISSIONER PETERMAN: Well, I think there are
19 some people who want to applaud that.

20 (Applause)

21 COMMISSIONER PETERMAN: Mr. Freeman, first of
22 all thank you for your extensive service to the State in
23 various capacities, and for your comments.

24 You have touched on a lot in your comments,
25 enough that we could spend days talking about them.

1 I'll just say one or two things and see if
2 anyone else wants to say something.

3 I think all the issues you have raised are all
4 issues that we are thinking about and we are concerned
5 with, as well.

6 As I mentioned earlier, we just completed seven
7 workshops at the Energy Commission, where we had
8 engagement from every agency represented here, and many
9 of the parties who are in the room, really looking at
10 some of our challenges to develop renewables.

11 And particularly looking at the issues of
12 integration and thinking about have you -- what the
13 right balance is between storage, demand response, and
14 actual gas plants.

15 And really getting to the question you've asked,
16 which is how do we get -- how do we achieve the goals
17 we've already set out for ourselves, the 33 percent by
18 2020, what would it take to move beyond that.

19 And we're doing as a part of that, now,
20 developing some recommendations, some actionable things
21 that need to happen in the State for the next few years.

22 And we invite you, as well as every member of
23 the public, to comment on those recommendations. We'll
24 be releasing those towards the end of this summer,
25 beginning of the fall.

1 And I, personally, will reach out to you to see
2 your thoughts on those.

3 So, those are my general comments. Anyone else
4 on the dais?

5 CPUC COMMISSIONER FLORIO: Just I believe at
6 least the IOUs reported that they made 20 percent in
7 2011. Now, that --

8 MR. FREEMAN: Under contract, but not
9 necessarily --

10 CPUC COMMISSIONER FLORIO: Oh, no, I think they
11 said the actual generation of it hasn't been verified,
12 yet.

13 And we do have contracts that get us very close
14 to 33 percent. Now, that's paper, that's not megawatts.
15 But a lot is getting built and we're going to continue
16 procuring.

17 And, you know, we're certainly prepared to go
18 beyond 33 percent, if Mr. Berberich lets us.

19 (Laughter)

20 COMMISSIONER PETERMAN: I think the issues of --
21 the issues of project viability, and transmission, and
22 timing are all things that we're --

23 MR. FREEMAN: Could I have one more minute? If
24 you would simply outlaw interconnection agreements
25 between people that want to put solar in and the

1 utilities that would revolutionize the pace at which
2 solar was implemented.

3 The inter -- there is no need for a formal
4 interconnection agreement. That is a the -- I used to
5 run utilities. That's the way a utility delays solar
6 coming on. And someone needs to have the courage to
7 propose a reform to CEQA so that it no longer is a place
8 where nimbys can stop large solar projects.

9 Why can't you lay out some corridors and say the
10 transmission lines and the plants need to be built in
11 this area, and then fast track them.

12 I mean, you know, I was there at the creation of
13 these laws. Ed Muskie, and Scoop Jackson, and those
14 people would turn over in their graves if they thought
15 the law the pass for a National Environmental Policy Act
16 was holding up a solar power plant. And they are.

17 And, you know, I'm an environmentalist. There's
18 a lot of projects that you ought to say no to in the
19 first 30 seconds that they're filed. But there are a
20 lot of others that do not need to spend billions of
21 dollars, you know, in bribery money, I think, and be
22 delayed for years.

23 You know, the reform ought to be to make NEPA
24 and CEQA tougher, but quicker. And somebody's got --
25 and if the politicians won't propose that legislation,

1 you guys should.

2 COMMISSIONER PETERMAN: Thank you very much.

3 We'll take everything you said under consideration, of
4 course, and looking forward to discussing further as we
5 develop this 2012 IEPR. Thank you.

6 Our next public comment will be from Barbara
7 George, Women's Energy Matters. Ms. George, please.

8 MS. GEORGE: Thank you. It's a pleasure to be
9 here today with all of you Commissioners, and the
10 President of the ISO.

11 Women's Energy Matters has been in the energy
12 efficiency proceedings for the last dozen years, so
13 we're -- you know, we think of energy efficiency first,
14 and the State has actually adopted energy efficiency as
15 the number one in the loading order.

16 So, I'd just like to make a few comments on what
17 we could be doing with energy efficiency that would
18 solve a lot of these problems more quickly, and a lot
19 cheaper, and produce a whole lot of jobs in the process.

20 So, air conditioning is 30 percent of our peak
21 load, right? There hasn't been much of anything done on
22 air conditioning efficiency in California for many, many
23 years. And that is there's reasons for that, it has to
24 do with the avoided costs were not set to reflect the
25 peak load, only an average load.

1 That has been changed, thank goodness, so we may
2 see more air conditioning efficiency going forward, but
3 it hasn't happened yet.

4 So, one of the things that I'd like to say is
5 you can shave off the peak with air conditioning over
6 the next couple of years. You can cut it down with
7 demand response immediately.

8 And going back to Mr. Freeman's earlier job at
9 SMUD, they closed down a nuclear power plant suddenly
10 and he was presiding over that utility when they
11 replaced that power primarily with energy efficiency,
12 and demand response, built a lot of solar and wind.

13 They did not have to raise their rates and
14 they're still 25 percent cheaper than the investor-owned
15 utilities.

16 SMUD did better on air conditioning, more
17 insulation, white roofs. They planted trees, which
18 actually lowered the temperature of Sacramento seven
19 degrees. So, these are possibilities that we should be
20 looking at with the amount of energy efficiency that we
21 have.

22 We are -- currently Edison, Southern California
23 Edison has \$534 million of their energy efficiency funds
24 for 2010 to 2012 as of May 1st this year. And their
25 entire budget is a billion two dollars for a three-year

1 period.

2 Now, with \$534 million -- I mean, you know,
3 they've got commitments of about a hundred million, so
4 let's say it's \$450 million. We have that money that
5 could be spent on air conditioning, and currently is
6 not.

7 The utilities have the opportunity to shift
8 funds; it's almost an unlimited authority that the
9 Commission has given them to shift funds for programs
10 that are needed.

11 In the past there have been summer programs. I
12 know in the energy crisis of 2001 there was a summer
13 initiative program. Edison, themselves, had a summer
14 program in 2005.

15 So, there are certainly things that we could do
16 right now with the air conditioning money. We could
17 have a lot more done next year.

18 And I'm happy to say that the cities are going
19 to have authority to use a lot of money that the
20 utilities are now sitting on, next year.

21 So, I urge you to have -- you know, think first
22 about energy efficiency. I know we're all, you know,
23 energy infrastructure people here, but think of the
24 power plant that's, you know, a better refrigerator and
25 a better air conditioner, those are power plants, too.

1 They're megawatt power plants.

2 And California talks about using them, let's
3 actually start doing that. And we have a great
4 opportunity with the 2,000-megawatt nuclear power plant
5 shut down to show what energy efficiency can do. And
6 this would reverberate around the world if we went ahead
7 and did this.

8 This is really the way to keep air emissions
9 down, protect the water quality, give a lot of people
10 jobs, build local businesses, and lower the rates for
11 ratepayers in California. It's a win, win, win, win,
12 win.

13 COMMISSIONER PETERMAN: Ms. George, I'm going to
14 have to ask you wrap up.

15 MS. GEORGE: Thank you. Thank you so much.

16 COMMISSIONER PETERMAN: Thank you.

17 Our next speaker will be --

18 (Applause)

19 COMMISSIONER PETERMAN: -- Gary Headrick.

20 And I'll also add that we are taking all written
21 comments, as well in this proceeding. And if I move you
22 along, it's simply because I have a lot of cards here
23 and we have a lot of presenters later in the afternoon,
24 and we have a firm stop to leave this room.

25 But really appreciate your passion and your

1 comment.

2 So, Mr. Headrick, please.

3 MR. HEADRICK: Yes, thank you very much for
4 allowing me to approach this dignified board and
5 expertise that I wish I had a better grasp of.

6 My position here is as a representative of just
7 the average citizen. My wife and I started a group
8 called San Clemente Green and we're just a
9 sustainability action group, and got involved in the
10 nuclear power issue because of whistle blowers
11 disclosing very critical information about -- one thing
12 in particular was the steam generators that were being
13 installed at the time, at the end of 2010, when we were
14 approach.

15 And lo and behold, the questions and concerns
16 they had panned out to be real. It's no longer
17 hypothetical, were they telling the truth? You know, we
18 can see the results of what happened from negligent
19 process.

20 The public is very concerned and we have a lack
21 of trust factor with the whole process between the
22 Nuclear Regulatory Commission and Edison.

23 And the fact that we're being put at risk due to
24 a failed system, which we invested \$670 million of our
25 ratepayer money into, which not only put our lives at

1 risk, had it failed worse, but that's a huge cost to us
2 that could have been redirected towards safer, cleaner
3 alternatives.

4 And we're just -- we're here to say that we
5 started out at a 500-person membership when the nuclear
6 issue became our concern, we've grown to about 1,500
7 people.

8 And as we take this message to other city
9 councils and people that live within a 15-mile radius of
10 San Clemente, we keep growing.

11 And I'm just here to tell you that everything on
12 our agenda is to keep that plant shut down. And I hope
13 you take that into consideration in your planning
14 because we're going to do everything we can to keep that
15 plant right where it's at, just under these conditions
16 with the -- you know, let's start the de-commissioning
17 process and let's move on. Let's don't keep doing these
18 studies that could be -- they could be inappropriate
19 because this power plant is so unreliable.

20 I think we should just move on and take that
21 into your planning.

22 And I appreciate your expertise and I know you
23 have the ability to do this, so please do it on behalf
24 of the citizens. Thank you.

25 COMMISSIONER PETERMAN: Thank you for your

1 comments representing --

2 (Applause)

3 COMMISSIONER PETERMAN: I'm now going to turn to
4 Jennifer Didlow, a project director AES. Welcome.

5 MS. DIDLOW: Thank you. I don't know if you
6 intentionally left this up here?

7 COMMISSIONER PETERMAN: Oh, thank you.

8 MS. DIDLOW: Thank you. Appreciate the
9 opportunity to address you and also to have the
10 opportunity, since Councilman Brand provided some
11 information about Redondo Beach, I really wanted to make
12 sure we have a balanced dialogue.

13 So, this is not about a single community, this
14 is about doing what's responsible to keep the lights on
15 in an environmentally sensitive manner for Los Angeles
16 and Orange County residents.

17 And I just wanted to make sure that we know that
18 Bill, while Bill is an elected official and does
19 represent folks that vote, he's definitely not, as he
20 perhaps said, representing the entire population of
21 Redondo Beach.

22 So, I wanted to make sure that we keep that in
23 mind. And we also know that while you all have said
24 that there probably is excess OTC generation, I haven't
25 heard anyone say that an entire plant could retire.

1 Perhaps there are some units that could retire. So,
2 excess generation, from an OTC perspective, I think we
3 need to be careful about how we characterize that.

4 I guess then, really, the last point I'd like to
5 make, I thought Mo's comment there on the Scattergood
6 Olympic Transmission Line that they've been attempting
7 to site for over 15 years, that hasn't even been
8 approved, really proves that a transmission solution in
9 the South Bay is not acceptable.

10 And so I would encourage you to continue with
11 the diligence and the analysis that you're performing
12 around what is actually needed in the Los Angeles Basin
13 to make sure that Los Angeles and Orange County
14 residents have a stable supply of electricity, while
15 California meets all of its clean energy and clean air
16 objectives.

17 Thanks.

18 COMMISSIONER PETERMAN: Thank you for your
19 comment.

20 Next, we'll hear from Chris Ellison, from
21 Pathfinder Zephyr.

22 MR. ELLISON: Good morning.

23 COMMISSIONER PETERMAN: Good morning.

24 MR. ELLISON: I will try to be brief. Chris
25 Ellison, Ellison, Sneider and Harris, representing

1 Pathfinder Zephyr.

2 For those who don't know, Pathfinder is a 3,000
3 megawatt wind project in Wyoming. Zephyr is the
4 proposed transmission line to deliver that energy to
5 Southern California.

6 The wind resource in Wyoming is extraordinary.
7 There is also very low-cost gas in Wyoming and the
8 combination of those two things, in the view of
9 Pathfinder Zephyr, they believe strongly that they can
10 deliver wind energy, renewable wind energy to
11 California, to Southern California at a very, very
12 competitive price, notwithstanding the distance.

13 With that background, let me pick up on what
14 Chairman Weisenmiller said at the outset of this
15 discussion about the uncertainty -- well, before I do
16 that let me say this, I want to commend, on behalf of
17 Pathfinder Zephyr, this proceeding and this gathering of
18 important State officials to address these issues.

19 We feel very strongly that these issues are
20 extremely important and are very pleased to see the
21 attention that you all are paying to these questions.

22 And with that said, let me return to what
23 Chairman Weisenmiller said about the tremendous
24 uncertainty that we face. And I agree, I've been in
25 this business for about the same period of time and I

1 can't think of a time when there were more important,
2 big, uncertain questions in front of the State regarding
3 the supply of electricity, than I'm aware of today.

4 And there are lots of different questions that
5 you're trying to resolve about how to deal with it.

6 But let me suggest that it is in the interest of
7 the State of California, put aside Pathfinder Zephyr, to
8 build into its infrastructure as much flexibility to
9 hedge against the uncertainty of the future as possible.
10 To recognize that we don't know exactly what's going to
11 take place on the generation side.

12 To recognize that there's a lot of uncertainty
13 in permitting, to recognize that there's a lot of
14 uncertainty with environmental issues, to recognize that
15 there's a lot of uncertainty in technology improvements
16 and cost.

17 What does that say? What it says to me is that
18 having a robust transmission system that provides
19 flexibility, that enables generation to compete from a
20 lot of different sources, that enables access to a lot
21 of renewable generation in a lot of different locations
22 is in the interest of the State of California.

23 And that's the main message that I want to
24 deliver on behalf of Pathfinder Zephyr. All they really
25 want is the opportunity to compete. They believe that

1 if given that opportunity they will be very competitive
2 and provide not only low-cost renewable energy to
3 California, but renewable energy from a different
4 geographic area.

5 And I want to pick up on what Mr. Berberich said
6 about the reliability issues with wind and the
7 possibility of losing -- and I forget the number of
8 megawatts you mentioned in half an hour, but it was in
9 the hundreds of megawatts.

10 Having wind from Wyoming can help protect
11 against that because it's a different wind regime. And
12 the likelihood of losing wind in Wyoming and California
13 simultaneously is less.

14 The main point here though is this, that
15 transmission takes a long time to plan for, it takes a
16 long time to permit. That's a reason to plan for, and
17 try to permit now, a robust transmission system,
18 recognizing that you can downsize the plant, you can
19 decide not to construct something that you planned and
20 permitted far more easily than you can go the other
21 direction.

22 If you underestimate the amount of transmission
23 that you need, if you guess wrong by betting on a load
24 transmission plan, you can't fix that.

25 But if you guess wrong in the other direction,

1 you can fix it.

2 So, the main message from Pathfinder Zephyr is
3 that we would urge you, and I know we've said this
4 before, we would urge the ISO and all the different
5 agencies to plan and permit for a robust, flexible
6 transmission system that includes the option, preserves
7 the option of significant imports from out of state.

8 Thank you very much.

9 COMMISSIONER PETERMAN: Thank you, Mr. Ellison.

10 Next, we'll hear from Mr. Jim Stewart from the
11 Sierra Club.

12 And we have two more comments after that and
13 then we will break immediately for lunch and then try to
14 get us a bit back more on schedule.

15 Welcome.

16 MR. STEWART: Hi, glad to be here. And it looks
17 like we've had laid out before us almost like a perfect
18 storm, right. We've had greenhouse gas crisis, we have
19 an air quality crisis in the South Coast Basin. We have
20 to shut down these OTCs so we don't wipe out the
21 wildlife in our seas.

22 We have San Onofre down and I hope -- we hope
23 that it's out forever. And we've got this time to, you
24 know, permit and build transmission lines.

25 And we've got then the ISO saying, well, what

1 about an outage?

2 There's one solution that solves all those
3 problems, it's called rooftop solar. I mean it seems
4 ridiculous but I don't know, I mean I'd like to actually
5 get the ISO to explain to us when they don't this worst
6 case scenario they had in their -- you know, for the
7 L.A. Basin, 271 megawatts of DG in their base case
8 scenario and 1,500 megawatts of DG in their
9 environmental scenario.

10 And actually, from the Sierra Club's analysis,
11 we can actually do better by 2021 by only 1,500
12 megawatts in there.

13 So, how does DG solve all the crisis, right?
14 Well, there's no greenhouse gas emissions; right?
15 There's no need for building new transmission; right?

16 There's no greenhouse gas emission, I mean
17 there's no air quality emission issues.

18 And when do we have the crisis? We have the
19 crisis on the peak hot summer days, there's no clouds,
20 we're roasting here in L.A. and our rooftop solar is
21 putting out its maximum power just when we need it.

22 So why is this kind of perfect solution not
23 getting the huge priority? Instead we're, you know,
24 trying to figure out which of these big natural gas
25 plants we're going to re-power, and replace, and all

1 that kind of thing when, for approximately the same
2 cost, we can put that rooftop DG on and we don't have to
3 worry about any outages.

4 Thank you.

5 COMMISSIONER PETERMAN: Thank you for your
6 comments.

7 (Applause)

8 COMMISSIONER PETERMAN: Next, we're going to
9 have Rob Longnecker from Clean Coalition.

10 And as he comes up, I just have to say about the
11 last presentation, the State does prioritize rooftop
12 solar. So, I will respectfully disagree and say there's
13 no one technology that's going to fix this problem. If
14 there was, we would all invest in it and then spend our
15 time working through a number of other problems in the
16 State.

17 And so, happy to have this discussion and we do
18 it in our forums, but I'll leave it at that.

19 Sir.

20 MR. LONGNECKER: Rob Longnecker, Clean
21 Coalition. Actually, I just wanted to echo some of the
22 comments that were just made. I was listening to you
23 guys talk about replacing the SONG and replacing the OTC
24 plants, and I had the same kind of thought that I think
25 about what you guys are looking for when you're looking

1 about dealing with local capacity issues, getting your
2 projects online fast, dealing with emissions, all of
3 that is addressed by distributed generation as well.
4 And particularly, if you're talking about peak load
5 issues, solar.

6 So, I would encourage you to just try to work
7 that into your plans more and take that into
8 consideration.

9 The other question I had or I guess issue would
10 be the FERC 1000 where it recently emphasized non-
11 transmission alternatives. And I think that's something
12 that hasn't really been talked about very much and I'd
13 just kind of like to bring that more to the discussion,
14 if possible.

15 Thank you.

16 COMMISSIONER PETERMAN: Thanks.

17 Steve?

18 MR. BERBERICH: If I might wade into this for
19 just one second, let me just talk about the technical.
20 First, we do plan for distributed generation. We like
21 distributed generation and we're supportive of
22 distributed generation. Hell, I'd like to have 50,000
23 megawatts of distributed generation, it would make the
24 system -- you know, it would have less load on the
25 system.

1 But we do have to plan, though, for people like
2 to have their lights on and we have to figure out how to
3 do that given what we see.

4 And if we see additional rooftop generation,
5 we'll certainly put that into our planning.

6 We did talk about some of the other issues here,
7 though, about the needs for inertia and all kinds of --
8 unfortunately, some nasty things that we also have to
9 consider when we plan the electric system.

10 Because at the end of the day, let me be clear
11 about this, the ISO is a nonprofit institution. We
12 don't give anything about building generations, we don't
13 give anything about building transmission lines, we
14 don't care.

15 We care about a reliable system. And if we have
16 less transmission, fantastic, we'll plan for that. If
17 we have less -- need less generation, we'll plan for
18 that, too.

19 And I hope everybody understands that what we're
20 trying to do is focus on serving the load. The load can
21 be served, as Commissioner Peterman said, many different
22 ways.

23 And I think the conversation here today is about
24 how can this State look at serving it different ways.

25 And so I encourage the dialogue because storage plays a

1 big role in it.

2 Now, I will tell you storage is real expensive
3 right now. And one of the things I know is that people
4 don't like paying more for power. And I got to tell
5 you, power prices are going to go up from all these
6 things that we're trying to do and we have to think
7 about ways to mitigate that.

8 And part of this dialogue is about finding ways
9 to mitigate that, to build less transmission.

10 This State right now, to hook up 33 percent
11 renewables is going to embark on a program to spend
12 about \$7 billion on transmission, \$7 billion. That's a
13 lot of money.

14 The current transmission base right now is about
15 four and a half billion dollars, so you can see what
16 that -- someone's going to pay for that. Ratepayers in
17 California are going to pay for that.

18 So, this dialogue that we have here today I
19 think is a very important one because the way -- if we
20 can minimize the amount of transmission we have to do,
21 avoid the \$7 billion, we'll certainly do that.

22 We're supportive of clean air, we're supportive
23 of clean water. We want to handle the once-through
24 cooling issues as well because we understand the impact.

25 But we also know that people's life and health

1 depends on the flow of power. We've got to balance all
2 of those things here in this State.

3 CPUC COMMISSIONER FLORIO: Yeah, I'd just like
4 to add a word. I made a comment earlier that I think
5 may have come across wrong when I said we'd like to go
6 beyond 33 percent, if Steve would let us.

7 I didn't mean to imply that there's like some
8 personal -- I mean you've got complex things to deal
9 with and those are what we have to understand and manage
10 to go beyond 33 percent. And I think we will but
11 it's --

12 MR. BERBERICH: No offense taken, Commissioner,
13 no offense taken.

14 CPUC COMMISSIONER FLORIO: Yeah, it was -- these
15 are accomplished not as simple, it's not a water system
16 or a natural gas system where you put it in at one end,
17 add a little pressure and it comes out the other.

18 There are these very complex engineering factors
19 that have to be taken into account or the system doesn't
20 work, and everybody's unhappy.

21 So, I mean these are the challenges we're
22 grabbing with and, you know, they're real and they're
23 difficult. But, you know, everybody up here is
24 committed to make it work.

25 COMMISSIONER PETERMAN: And I'll just say these

1 challenges are not new, we've been trying to deal with
2 these challenges for many years. But just in the year
3 plus that I've been on the Commission I've seen
4 improvement. Even today I heard about solutions I
5 hadn't heard about before.

6 And it really ties into having the research
7 being done by our institutions so that the cost of these
8 technologies come down, so that more things become
9 available.

10 So with that, let me turn to our last public
11 comment, is Rochelle Becker, Executive Director of
12 Alliance for Nuclear Responsibility.

13 MS. BECKER: The very first thing I would like
14 to do is thank everyone up there. I have waited almost
15 40 years for every agency to get together and start
16 talking about what nuclear power plants cost and how
17 reliable they are, which is entirely the State's job.

18 On Monday night I attended the Nuclear
19 Regulatory Commission meeting. About 30 percent of the
20 people there asked what this was going to cost.

21 Mr. Florio, there's a \$782 million cap on this
22 project. Ratepayers aren't paying a penny more.
23 Investing in something new, investing in new technology,
24 I'll open my pocketbook, but not to fix that nuclear
25 plant, not again, not ever again.

1 In 2005 the Energy Commission, thank you Energy
2 Commissioners, had a forum and they brought all parties
3 together. They brought the utilities, they brought all
4 the acronym agencies from the Federal government to the
5 State government, and I'm not going to name them all,
6 there's just a lot of them.

7 They brought unions, they brought the utilities,
8 they brought the Alliance for Nuclear Responsibility and
9 for two days we talked about the future of nuclear
10 power. We talked about it in 2005.

11 And the Energy Commission made some really good
12 recommendations and one of them was that we needed to do
13 a cost, benefit and risk analysis.

14 And we did a pretty good job on risks and
15 benefits. We did a really crummy job on what this all
16 costs, and cost is what's driving everything and
17 freaking everyone out, we have to make some major
18 investments.

19 Now, when I see that the plans go to -- a ten-
20 year plan goes to 2021, well, it's -- a ten-year plan
21 from 2012 is 2022, not 2021. And the reason I mention
22 that date is 2022 is the end date for the license of San
23 Onofre. So, having a plan that ends the year before the
24 end date of this nuclear plant, should it ever get back
25 online again at shareholder dollars I think is a

1 little -- one year shortsighted.

2 On Wednesday I attended the Water Board meeting,
3 I sit on the Nuclear Oversight Committee for the Water
4 Board. And I had Bechtel say to me, as they're planning
5 what the different scenarios are for once-through
6 cooling, well, with enough engineering and with enough
7 money we can do anything.

8 And I said, yeah, you probably can. Of course,
9 you didn't fix the once-through cooling problem at San
10 Onofre the first time, and we put a lot of money into
11 it, you engineers. But you know what, those dollars are
12 coming out of my pockets and my pockets are getting
13 emptier and emptier, and I'm getting older and older,
14 and so it's going to be my daughter's pockets, and my
15 grandchildren's pockets.

16 And they've been trained, they're not giving you
17 a penny, not any of them, and nor should anyone else in
18 this room.

19 So, I thank the Energy Commission with all my
20 heart, I think you've done a tremendous job.

21 Mr. Florio, I thank you for stepping into a huge
22 mess. I am so sorry it's you because I really like you,
23 but it's a mess that has to be taken care of.

24 (Laughter)

25 MS. BECKER: The ISO, you know, I just think you

1 haven't done your job. I was the president of Turin
2 during the energy fiasco; we should have started our
3 planning there. We should have never assumed that we
4 have one unit at a nuclear power plant, much less two
5 units.

6 We sit on a seismically active coast. The NIC
7 plans on leaving the waste here 250 years, but the DC
8 Court of Appeals, a couple of weeks ago said, you can't
9 even leave it here 60 years.

10 We've got earthquakes, we've got waste on our
11 coast. You want to talk about safety, go ahead and
12 compare those two things. I'll be a little hot in the
13 summer.

14 You know, I sat in San Diego. I have a second
15 home in San Diego and I sat during the interview
16 commission proceedings over and over, and I heard the
17 angst, the terrible stories that people were telling
18 about not having power, and sharing refrigerators at one
19 house, and air conditioning at the other house, inland.

20 I live on the coast, I'm lucky, I just go down
21 to the beach. But there's a lot of people in San Diego
22 that are really hot.

23 And so you had an opportunity then to start
24 planning. I think a governor lost his job because he
25 didn't do that planning and cost us a lot of money.

1 There's a political reality here, there's a
2 technical reality here, but there's a cost reality here
3 and we need to stop investing in things that you can't
4 say are economic or reliable.

5 Because as the Nuclear Regulatory Commission
6 said, on Monday, that's your job, not theirs.

7 Thank you.

8 COMMISSIONER PETERMAN: Thank you for your
9 comments.

10 (Applause)

11 COMMISSIONER PETERMAN: We are going to break --

12 MR. DAVIS: I just have a follow up.

13 COMMISSIONER PETERMAN: Well, there's a public
14 comment -- well, you had to, one, submit a card, so if I
15 had known you would do that --

16 MR. DAVIS: I did. If it's --

17 COMMISSIONER PETERMAN: I will give you two
18 quick minutes, honestly, sir.

19 MR. DAVIS: Thank you very much.

20 COMMISSIONER PETERMAN: And then we have a
21 public comment period at the end. And then we'll be
22 breaking and we'll be reconvening at two o'clock.

23 All right, you're on, go for it.

24 MR. DAVIS: Just as a follow up to my questions
25 and I didn't get a clear answer to the question of

1 whether or not Huntington Beach is on the table if we
2 need it in 2013 to avoid rolling blackouts, and whether
3 or not closing the nuclear power plants would make use
4 of rolling blackouts likely.

5 Now, you had spoken at first in terms of 2012,
6 saying that we were on the right side of positive, that
7 in one in ten years we would not have rolling blackouts,
8 that we would be okay, 2013, that was left vague.

9 But what I'm looking for is a question of
10 likelihood. If you left everything on the table, as
11 you've said, including Huntington Beach, would be right
12 side of positive in 2013. And most specifically, is
13 Huntington Beach on the table, as he said, everything
14 else is in 2013.

15 MR. BERBERICH: Well, I can answer this about
16 Huntington Beach, at the current course of speed the
17 emission credits for Huntington Beach are to be
18 transferred to Walnut Creek this fall, and so they're
19 not going to be available for Huntington Beach. And
20 Huntington Beach, at the current course of speed is not
21 going to run that summer.

22 Now, I see Mr. Washington is standing back
23 there, I suspect he would concur with my assessment.
24 So, that's not going to be an available option next
25 summer.

1 MR. DAVIS: So, you would allow rolling
2 blackouts rather than start Huntington Beach in 2013?

3 MR. BERBERICH: Well, it's not me. I can't -- I
4 can't conjure up emission credits. I can do some
5 things, I operate the grid, I dispense every four
6 seconds, but I can't conjure up credits.

7 COMMISSIONER PETERMAN: I thank you for your
8 question. Okay, we're going to break now.

9 MR. DAVIS: Thank you very much.

10 COMMISSIONER PETERMAN: We'll see you at two
11 o'clock. Thanks, everyone

12 (Off the record for lunch at 12:55 p.m.)

13 (On the record at 2:00 p.m.)

14 COMMISSIONER PETERMAN: Good afternoon, welcome
15 back. I hope you are well fed and ready for an exciting
16 afternoon.

17 Without further ado, we're going to get started
18 with our next presenter.

19 MS. KOROSSEC: Right, our presenter is Daniel
20 Skinner, from the California Public Utilities
21 Commission.

22 COMMISSIONER PETERMAN: I think you also need to
23 know that at five o'clock we have a firm stop. So, I'll
24 ask everyone, if you have special follow-up questions I
25 think everyone will make their e-mails available, all

1 the presenters and you can follow up with them directly.
2 Although, we will have some time for public time, but
3 how much time will really depend on how quickly we get
4 through the next couple hours. Thanks.

5 MR. SKINNER: Okay, thank you, everybody. I'm
6 Nathaniel Skinner with the California Public Utilities
7 Commission.

8 So, my presentation is very narrowly focused on
9 just the once-through cooling aspects of the long-term
10 procurement plans. They do cover a lot more of many of
11 the similar issues that were raised earlier today and
12 will be discussed this afternoon.

13 The LTPPs have two different elements related to
14 infrastructure and procurement. The 2010 LTPP changed
15 OTC procurement rules and the 2012 LTPP, future analyses
16 of potential need authorizations are being considered.

17 The 2010 LTPP changed the procurement rules for
18 PG&E, Southern California Edison and San Diego Gas &
19 Electric.

20 Contracts with OTC generation cannot extend past
21 the then-current Water Resources Control Board
22 compliance deadline. Any contract ending within one
23 year of the compliance deadline must demonstrate how OTC
24 compliance is facilitated. And any contracts more than
25 two years, and less than five years, must be filed by a

1 tier three advice letter.

2 The primary change with that last rule is that
3 part of their general procurement plans and
4 authorizations, the utilities can contract up to five
5 years with generation, as long as they meet their
6 procurement rules. This is an additional layer designed
7 to help facilitate OTC compliance.

8 Through their RFOs and solicitations, requests
9 for offers, OTC technology must be considered as part of
10 that evaluation process.

11 The change in procurement rules does allow
12 contracts past the compliance date, if the facility
13 becomes compliant by the date, if ratepayers are
14 protected against stranded costs, if ratepayers are
15 protected against future, unspecified cost increases.

16 So a lot of the discussion earlier today was
17 also around what ratepayers are paying and these are
18 some of the mechanisms put in place designed to help
19 ratepayers not have to pay too much money.

20 It also requires Commission approval, such a
21 need determination in the LTPP, and this determination
22 must be consistent with other procurement rules.

23 I've been reminded that not everybody probably
24 knows what the LTPP is. The LTPP is the long-term
25 procurement planning process. It is the CPUC's

1 mechanism which evaluates both needs for new
2 infrastructure and new resources.

3 In the past it went out to a ten-year forward
4 look. In the 2012 LTPP it has been forecast to be a 20-
5 year forward look.

6 The second part of the LTPP are rules for the
7 bundled customers of the three large utilities.

8 The 2012 LTPP, which is the current cycle we are
9 in. In the May 2012 scoping memo, one function was
10 meeting local capacity needs between 2014 and 2021.

11 Another issue was whether or not flexibility
12 needs should be incorporated in any authorization of
13 need for resources in local areas.

14 Applying any decision from the resource adequacy
15 proceeding. The resource adequacy proceeding does a
16 one-year forward look ahead to make sure there are
17 sufficient resources under contract.

18 So any decision there, such as on definitions of
19 flexible resources, would be considered.

20 Whether the ISO's local capacity requirements
21 and OTC studies should be adopted by the PUC and then,
22 also, meeting local capacity needs between 2014 and
23 2021. A little bit of duplication there, tells you that
24 we're taking it seriously.

25 The scoping memo also includes whether or not

1 flexibility needs should be incorporated in any
2 authorization of need.

3 It includes how resources, such as demand side
4 management, which is energy efficiency, demand response,
5 energy storage, distributed generation would be
6 considered in meeting any of these needs. And then,
7 also, cost allocation.

8 As some background, this LTPP cycle has in-
9 scoped the local capacity needs for the L.A. Basin and
10 Big Creek Ventura.

11 The local area needs for San Diego are being
12 considered in a separate application. And the ISO
13 study's determined that efforts taken over the last six
14 years have largely met the needs for the Bay Area, which
15 has -- is the other area with OTC generation in it.

16 One of the key functions is enabling compliance.
17 Several different vehicles to pay for OTC compliance, if
18 any replacement resources are needed and this includes
19 options such as transition to air cooling, or facility
20 re-powering.

21 Part of this process would be requests for
22 offers leading to a contract, cost of service contracts,
23 or no contract so a merchant generator becomes compliant
24 on their own, based on their own analysis of economics
25 and other compliance questions.

1 And this is designed to ensure the lowest cost
2 to consumers, while upholding State's objectives and
3 rules.

4 Some timing, the ISO served their testimony on
5 track one of the 2012 LTPP on May 23rd.

6 On June 25th, so Monday, other parties will
7 serve their testimony.

8 There will be a second pre-hearing conference on
9 July 9th. Reply testimony from all parties on the 23rd of
10 July.

11 Commissioner Florio talked about this briefly,
12 but evidentiary hearings from the 7th of August until the
13 17th, and those dates will be refined somewhat as parties
14 come back and indicate how much time they're going to
15 need for hearings.

16 And then a proposed decision issued in November
17 or December of this year, and some sort of procurement
18 action, e.g. a request for offer, will take place in
19 2013.

20 So, there was some discussion earlier about the
21 need to act quickly. This is about as quickly as the
22 PUC can act given rules and policies to ensure that the
23 public has a chance to weigh in on these matters.

24 Any questions? Okay, thank you. And if anybody
25 has any questions they can feel free to contact me,

1 Nathanial.skinner@cpuc.ca.gov.

2 COMMISSIONER PETERMAN: Thank you, Nathanial,
3 you've gotten us off to a very succinct and quality
4 start in the afternoon.

5 MS. KOROSEC: All right, our next speaker is
6 David Vidaver, from the Energy Commission.

7 COMMISSIONER PETERMAN: David, I'm sure you will
8 not disappoint, representing the Energy Commission.

9 (Laughter)

10 CPUC COMMISSIONER FLORIO: No pressure.

11 COMMISSIONER PETERMAN: No pressure.

12 MR. VIDAVER: Thank you. Okay, Commissioner
13 Peterman asked me over lunch to keep this short, so I'm
14 hoping that's what she meant when she said I won't
15 disappoint.

16 I'm David Vidaver, I work for the Energy
17 Commission's Electricity Analysis Office. I'm going to
18 go through a lot of nerdy stuff really quickly. You see
19 my e-mail address and my phone number, call me, write
20 me, it's my job to keep you informed.

21 You're going to find this a little different,
22 I'm not going to talk about Los Angeles, I'm going to
23 talk about Northern and Southern California. I'm going
24 to talk about the system and zonal reliability, a couple
25 of terms which I probably should define at the outset.

1 California has five balancing authorities,
2 system reliability is just the ability of the balancing
3 authority to keep the lights on in the area under its
4 jurisdiction.

5 And I'm going to talk about the California ISO
6 because we love to pick on them.

7 California ISO has two major zones. You've
8 heard about Path 26, and there's north of Path 26 and
9 south of Path 26, so that's that.

10 A traditional way of assessing reliability is
11 called the load resource balance. Chairman Weisenmiller
12 referred to it in his introductory remarks, I believe
13 Dr. Jaske said the same thing, it's a very, very simple
14 analytical tool.

15 You look at demand, you look at supply, you look
16 at the ratio of supply to demand, you subtract one, and
17 hopefully you come up with 15 percent or more. Fifteen
18 to 17 percent is generally exceeded, historically, to be
19 the minimum reserve margin you need to keep the lights
20 on all but one day in ten years, which is our criterion
21 for reliable service.

22 The items in red here are the State's preferred
23 resources. These are the resources that we intend to
24 rely on going forward to reliably service load and
25 simultaneously meet California's goals regarding

1 greenhouse gas emission, and in general reducing the
2 impact of energy production and consumption on the
3 environment.

4 In relying on these, we're asking for a lot of
5 resources, more of these resources than we have ever
6 before, and we're asking for them really quickly.

7 We're going to retire 12,000 megawatts of OTC
8 plants and we may be without 2,246 megawatts of nuclear
9 facilities, or even double that.

10 (Applause)

11 MR. VIDAVER: This is not an advocacy basis,
12 it's just a bit of observation on my part. So, you can
13 clap whenever you want. Okay.

14 A caveat, and it's a very important caveat, this
15 is probably the most important slide in this deck. And
16 that is that the zonal and system reliability are
17 necessary, but in no way sufficient for reliably serving
18 load.

19 Now, you've heard about local capacity
20 requirements this morning, where generation is. You've
21 heard about stability requirements and flexibility
22 requirements, what it can do. This metric doesn't deal
23 with those.

24 And another important thing to remember about
25 load resource balance is that the capacity of the

1 generation resources has to be appropriately valued.
2 It's really easy to value the capacity, to quantify, not
3 monetarily value, but to quantify the dependable
4 capacity of a gas plant, of a nuclear plant, of a hydro
5 plant. It's less easy to do with the intermittent
6 resources, solar and wind, that we're going to rely on
7 going forward.

8 And how that's valued is very important and,
9 going forward, somewhat uncertain for reasons I'll get
10 to really quickly.

11 You've heard about California's local
12 reliability areas and sub-areas. There are about 12 or
13 14 reliability areas, probably 50 sub-areas. There are
14 four of greater significance because that's where we
15 have a lot of OTC facilities that we're retiring.

16 We've talked about Los Angeles, and San Diego,
17 Big Creek in Ventura, and the Bay Area all have
18 substantial amounts of OTC at local areas, that have
19 local capacity requirements that are called into --
20 become of concern given OTC retirements, as well as
21 what's going on in SONGS.

22 The easy part of looking at the future, if there
23 is an easy part, is resource additions. In the work
24 that we're doing, we're assuming about 7,500 megawatts
25 of new thermal capacity. It's roughly divided into

1 about 4,000 megawatts of stuff that is already under
2 construction.

3 In the greater Bay Area, elsewhere in Northern
4 California, and in the Los Angeles Basin, so this really
5 isn't in doubt. There's a plant in the greater Bay
6 Area, Oakley, who's construction has been sort of
7 approved, but not approved, necessarily, so we -- we'll
8 leave it out of this analysis.

9 The other 3,500 megawatts that we're talking
10 about is the 3,500 megawatts that the ISO tells us is
11 needed somewhere in the L.A. Basin to meet local
12 capacity requirements in 2021. It's actually not
13 entirely in the L.A. Basin. It's 2,400 in the L.A.
14 Basin, 430 in the Big Creek Ventura, and 650 in San
15 Diego. Neil Millar gave 630. I must have seen a
16 different study.

17 It's also easy to talk about retirements. We're
18 going to retire -- we're going to assume that everything
19 that uses OTC in the ISO control area is going to
20 retire. We're not talking about LADWP now, or this
21 year, whenever that -- Pittsburgh 7 isn't an OTC unit,
22 but if 5 and 6 retire, 7 can't continue to operate.

23 We've got a couple of small, non-OTC plants in
24 San Diego that are not OTC, that we assume are going to
25 retire within the next couple of years.

1 And in big red letters up there is something the
2 ISO would want me to tell you, and that is that
3 additional merchant plants, without contracts to cover
4 costs may be at risk of retirement through the
5 inadequate revenue streams.

6 So, when we talk about retirements being
7 certain, we're not being completely truthful.

8 So, now let's go to the elements of the load
9 resource balance, the preferred resources that are far
10 more questionable.

11 The impact of uncommitted energy efficiency
12 programs is very uncertain. These are yet to be funded,
13 yet to be designed, yet to be deployed programs that we
14 would reasonably expect to be funded by the Legislature,
15 and/or whomever, and put into place, and have an impact
16 on the amount of peak load in the State and the amount
17 of capacity that's necessary.

18 A 2009 IEPR study, based on a 2008 goals study,
19 funded by the CPUC, came up with some pretty large
20 numbers and you can see them there.

21 We're spending more money on energy efficiency
22 than ever before and we're counting on it to provide a
23 lot of capacity.

24 Questions as to whether or not it can actually
25 do that and do it by 2020 are valid.

1 Updated estimates for the 2012 IEPR update are
2 being prepared as we speak. I don't know exactly when
3 they're going to be out, but there are going to be new
4 estimates coming forth.

5 Combined heat and power; Commissioner Florio
6 asked a question about combined heat and power, and it's
7 ability to provide stability and meet local capacity
8 requirements.

9 This is another preferred resource for which
10 reasonably high targets have been set. The Governor's
11 Office has called for 6,500 megawatts by 2030.

12 In the AB 32 scoping plan the ARB called for
13 5,000 megawatts by 2020. They now express that goal in
14 terms of GHG emission reductions. But the targets set
15 in the 2000 long-term procurement proceeding were based
16 on the ARB target.

17 And what you see at the bottom is 1,505
18 megawatts were sort of set aside for the utilities to
19 procure and inform the CHP. That's half the goal of
20 ARB, 2,000 megawatts less the share that could be
21 reasonably expected to be procured by publicly-owned
22 utilities.

23 So, we start out with 1,505 megawatts. And the
24 2012 study, funded by the Energy Commission, said a
25 business-as-usual case is going to get you 1,123 in the

1 ISO control area, plus another 375 or so outside it.

2 So, now we're -- the numbers are getting smaller.

3 And a workshop held under the umbrella of the
4 2012 IEPR yielded questions regarding whether even the
5 ICF numbers were a reasonable planning assumption going
6 forward.

7 PG&E and Southern California Edison, in oral and
8 written comments, testified that numbers that they had
9 previously submitted, they thought were reasonable
10 planning goals. So, now you can see we're down to about
11 700 megawatts going forward.

12 So, demand response. We have very, very high
13 demand response goals. You can see that in 2020 the
14 2010 LTPP set aside, it's over 5,000 megawatts. Right
15 now we're sitting at about 2,600.

16 So there is a question as to, one, can we ramp
17 up to 5,000 megawatts in the next years? And the ISO
18 and others will point out that even if you get the 5,000
19 megawatts, not all of it may be able to contribute to
20 meeting local reliability and stability needs on the
21 system.

22 So, renewable resource development, we're
23 looking at two of the four cases developed by the CPUC.
24 For the 2010 LTPP, the cost constraint case or the ISO
25 complaint cases, and then the reliability constraint

1 case, which has more than 9,000 megawatts of DG.

2 The implications of 9,000 megawatts of DG are
3 you have more capacity in Northern California because
4 it's on rooftops. And PG&E, rather than sitting in the
5 Mojave desert, so that is implications for the quantity
6 of resources you have, both in Southern California and
7 in local reliability areas.

8 The capacity of the resource, which I mentioned
9 earlier, was something that might not be settled. In
10 our numbers, which follow, we assumed solar had a peak
11 capacity value equal to about 55 percent of its
12 nameplate.

13 So, if you have a 100-megawatt solar plant, it's
14 worth about 55 megawatts in capacity.

15 Solar thermal slightly higher. Wind varied
16 depending on where it was located.

17 This assumption can be kind of problematic
18 because solar is an intermittent resource.

19 And we created this graph out of the ISO's 33-
20 percent renewable integration studies. And you can see
21 the average, but nobody really wants to choose the
22 average output of solar at four o'clock in the afternoon
23 because that means that half the time you're below
24 average and you're not getting the capacity that you
25 want.

1 So there is a question as to how to value solar
2 resources in terms of capacity. You see a rather large
3 range there at four o'clock in the afternoon.

4 This is really a simulation, we don't have data
5 on 8,000 megawatts of solar plants, we have a lot of
6 simulation data and solar radiation data. And we try
7 and model the energy, as you see, try and model solar
8 portfolios depending on whether you have PV, rooftop,
9 whether it's in the Mojave Desert or on the coast.

10 And that range of numbers is really important
11 and it's really sensitive to a lot of assumptions you
12 make, so that needs to continually be looked at.

13 We have a similar problem with wind. I thought
14 I'd give you a Georgia O'Keeffe painting here. The
15 color variations are the dark blue in the center is 2575
16 and the whiter one is 595. And how risk adverse you are
17 determines what capacity value you attach to wind.

18 The lower the capacity value attached to it, the
19 more capacity you need to reliably operate the system.

20 There's another issue with solar and that is the
21 capacity value of solar is really sensitive to what your
22 portfolio looks like. The more solar you build, the
23 more you drive the net peak, net of solar generation to
24 later in the afternoon.

25 And if you build enough solar, the peak demand

1 on the rest of the system is eight o'clock at night and
2 you don't get a whole lot of solar energy. So, the
3 value of solar depends on not only how risk adverse you
4 are, but how much of it you have on the system.

5 So, we're looking at different portfolios and
6 trying to get our hands on more granular data to look at
7 when the system peaks, when the net peak is, when
8 solar -- four o'clock data, five o'clock data, six
9 o'clock data don't do you a whole lot of good because
10 you're really -- you might be interested in what happens
11 between 5:45 and 6:30.

12 Imports are uncertain. Using average imports on
13 peak during the summer might not give you a high enough
14 number because on most days you're not importing what
15 you could import reliably, when you really needed it.
16 Most high load days aren't really stressful, you're not
17 close to the annual peak.

18 If you have really high reserve margins, which
19 was said recently, you don't need as much in the way of
20 imports.

21 Finally, in the long run, as we contract with
22 renewable resources out of state, and NP26 utilities
23 contract with SP26 resources you're going to find that
24 net interchange data changes a whole lot.

25 So, we've got some pretty large numbers out

1 there, which the ISO has sort of agreed to use, although
2 I doubt they're fully convinced that we can rely on
3 these amounts of imports in the long run.

4 In the long run we need to consider how much
5 California contracts with out-of-state utilities,
6 available energies and capacity surpluses in neighboring
7 states. If the northwest ever outgrows its hydro
8 system, we can't rely on 4,800 megawatts of energy
9 coming down.

10 Finally, here are the numbers for 2018 and 2021
11 for NP26. The reserve margins projected, using the
12 assumptions that I've used, are healthy. It's
13 conservative even if there's no uncommitted energy
14 efficiency, there's no combined heat and power. The
15 demand response is at 2012 levels, rather than the 2021
16 targets.

17 SP26, we have a slightly less optimistic set of
18 numbers. And then tossing in some of the uncertainties,
19 well, we could get more in the way of uncommitted energy
20 efficiency, we could build Oakley, we could get some
21 combined heat and power. The real capacity value of
22 renewables is probably -- it might be higher in Northern
23 California because we go to a Northern California
24 rooftop case versus a Southern California central
25 station, a resource case to put it bluntly, we might get

1 more demand response.

2 Moss Landing 1 and 2 is the one OTC plant we
3 assumed didn't retire because it's a new combined cycle
4 and it might be economically feasible for them to swap
5 out their cooling system and continue to operate. The
6 net interchange numbers are pretty high.

7 And SP26, again, you have uncommitted energy
8 efficiency numbers. SONGS is the 2,245 megawatt gorilla
9 in the corner, combined heat and power.

10 Again, so what these say is that given the
11 assumptions that have been made in here there is enough
12 capacity to meet zonal and local reliability.

13 But again, anticipating what Mr. Berberich is
14 going to say, that doesn't mean that you're going to be
15 able to keep the lights on in Los Angeles.

16 You need resources in specific locations, you
17 need resources capable of providing certain services,
18 frequency control, voltage support, and this doesn't
19 tell you anything about that.

20 So, finally, one other thing -- there's nothing
21 in here about power plant outages. How many power
22 plants can be expected to be out on maintenance at any
23 one point in time? We said 15 to 17 percent is a nice
24 surplus that should keep the lights on.

25 That assumes that maybe six or eight percent of

1 your power plants are out at any one time on
2 maintenance. If the number gets higher, you have a need
3 for a greater reserve margin.

4 And these are the average outages on peak in the
5 ISO, from 2006 to 2011. And the way to interpret this
6 is 2011, at four o'clock in the afternoon on a weekday,
7 in July and August, and June, and maybe September an
8 average of 6,000 megawatts of capacity was unavailable
9 because it was either broken or in the process of being
10 fixed.

11 These numbers are a little strange because
12 there's no reason that the power plants should be
13 getting less reliable. They are getting a little bit
14 older but -- so the assumptions you make about this,
15 which aren't explicit in the load resource balance
16 analysis are important and this is something that needs
17 to be looked at.

18 But what is a reasonable set of assumptions
19 about the share of your fleet that's out for maintenance
20 on the -- for planning, that you assume for planning
21 purposes.

22 And I'm out of here. How did I do?

23 COMMISSIONER PETERMAN: Thank you, you did very
24 well. Thank you.

25 MR. VIDAVER: Thank you. Okay.

1 COMMISSIONER PETERMAN: You did not disappoint.
2 Any questions from the dais? I know that was a
3 lot of information presented there, any comments or
4 questions?

5 COMMISSION CHAIR WEISENMILLER: Well, I'll just
6 repeat my comment from the morning because this is a
7 simple load resource balance, it doesn't tell you
8 anything about whether you can keep the system
9 operating.

10 MR. VIVADER: Correct.

11 COMMISSION CHAIR WEISENMILLER: Move power
12 around or have flexibility.

13 MR. VIVADER: Sure.

14 COMMISSION CHAIR WEISENMILLER: It is a starting
15 point, but certainly not a conclusion.

16 MR. VIVADER: Correct.

17 COMMISSION CHAIR WEISENMILLER: But it does
18 illustrate some of these major uncertainties. Thank
19 you.

20 MS. KOROSEC: Our next speaker --

21 COMMISSIONER PETERMAN: Right before we take
22 our -- before we have our next speaker we have a quick
23 question from the audience. Ma'am.

24 MS. KOROSEC: You have to come up to a
25 microphone. Ma'am, can you come up to a microphone?

1 MS. GILMORE: Yeah, just a real quick question.
2 You mentioned something about in Northern California it
3 was rooftop and in Southern California it was a -- you
4 know what I'm talking about?

5 MR. VIDAVER: Yes.

6 MS. GILMORE: Could you explain that a little?

7 MR. VIDAVER: Elaborate on those?

8 MS. GILMORE: Yeah.

9 MR. VIDAVER: There are two sort of extreme
10 portfolios that are renewable portfolios that are
11 created to do analysis of the system. And one is sort
12 of more central station focused, large plants. And the
13 stereotypical large plant is a big solar facility in the
14 Mojave Desert or a big wind facility in the Tehachapi's.

15 The other scenario has -- I believe the CPUC
16 scenario has more than 9,000 megawatts of distributed
17 generation. Now, that --

18 MS. GILMORE: Besides solar rooftops?

19 MR. VIDAVER: And solar rooftops just --

20 MS. GILMORE: So, you're saying in Northern
21 California it is mainly solar rooftops is where you're
22 getting it, but in Southern California it's mainly
23 focused on centralized; is that correct?

24 MR. VIDAVER: I wouldn't go so far as to say
25 that.

1 MS. GILMORE: Well, I thought that's what you
2 said.

3 MR. VIDAVER: Most of the central station
4 resources in the State, a disproportionate share of the
5 central station resources in the State are being built
6 inland in Southern California.

7 MS. GILMORE: And why is that?

8 MR. VIDAVER: Because that's where the sun
9 shines and the wind blows.

10 COMMISSIONER PETERMAN: And more spaces.

11 MS. GILMORE: Okay, I thought -- I thought maybe
12 it was Edison's incentive program for solar or
13 something.

14 COMMISSIONER PETERMAN: No, it just has to do
15 where the preferred and primary resources are right now
16 for wind and solar, and happen to be in the desert, in
17 the mountains in the south.

18 MS. GILMORE: All right. Okay, I didn't
19 understand that. Thank you for clarifying.

20 MS. KOROSEC: All right, now we're going to hear
21 from Dr. Barry Wallerstein, from the South Coast Air
22 Quality Management District.

23 COMMISSION CHAIR WEISENMILLER: First, we'd like
24 to thank Barry for coming today. Yeah, I think one of
25 my business partners, ex-business partners is head of

1 the high speed rail and the *San Francisco Chronicle*
2 claimed he had the most difficult job in the State.
3 Actually, I think Barry probably does in terms of trying
4 to deal with air quality issues down here.

5 So, we certainly appreciate your participation
6 today.

7 DR. WALLERSTEIN: Well, thank you very much for
8 the invitation and I gladly yield the most difficult job
9 in the State to those that are trying to figure out how
10 to keep the lights on.

11 We're obviously part of that discussion. And
12 what I would like to do very quickly this afternoon is
13 talk about the context of the air quality problem, not
14 only here in the South Coast, but also it's applicable
15 to San Joaquin, and generally applicable to the
16 Sacramento area as well and the source of solutions that
17 will be needed and how that impacts the energy planning
18 process.

19 And then I also have a few observations to make
20 as someone who had my current job back in 2000-2001, so
21 I lived through that last power crisis in the current
22 role that I have. And so that, I think, gives me some
23 insight into what needs to be avoided and some of the
24 things that, frankly, start to raise the hair on the
25 back of one's neck that we might be headed in the same

1 direction if we don't get things straight now.

2 And with that, for those of you that aren't
3 familiar with the South Coast Air Quality Management
4 District, we're the local air district in the Los
5 Angeles Metropolitan area.

6 We're home to roughly 17 million Californians,
7 about four to five percent of the nation's population.
8 We're the largest of the local air districts anywhere in
9 the nation and have the largest industrial base and,
10 obviously, a very large motor vehicle base.

11 We're also home to the ports of Long Beach and
12 the ports of L.A. The port complex is the largest port
13 complex in terms of goods movement anywhere in the
14 nation. And, in fact, over 40 percent of the imports
15 coming into the U.S. come through our twin ports. And
16 the net dollar value of the goods coming into the ports
17 is roughly a billion dollars a day.

18 So, we're talking about a major economic engine,
19 not just for Southern California, but the State and the
20 nation.

21 I'm going to share with you some data that puts
22 into perspective the health impacts and this first chart
23 is really the most important.

24 And if you look at the pie chart on the left,
25 that says nationwide. If we look at ozone exposure,

1 summertime smog exposure for the entire United States
2 what percentage of that exposure actually occurs in
3 South Coast? As you can see, it's 48 percent. San
4 Joaquin has ten and a half percent, and Sacramento had
5 about five and a half percent, and San Diego had five
6 percent.

7 So, if you look at the State of California as a
8 whole, it's about two-thirds of the national exposure
9 above the standards, even though we're only ten percent
10 of the State's population.

11 And, of course, if you look at the statistics
12 just for California, you'll see South Coast had about
13 two-thirds of the exposure.

14 Now, this data is a little bit older and it's
15 going to change considerably over the next few years
16 because we've seen some remarkable improvements in
17 particulate exposure in South Coast.

18 But if we went back to the 2007-2009 time period
19 we had over 40 percent of the nation's exposure above
20 the particulate standards.

21 So, I'm pleased to report for this particular
22 standard we're hoping to actually attain that by 2015.
23 But I also have to report that just last week the
24 Federal government proposed lowering the standard to a
25 more health protective level, and intends to do so by

1 year's end. And so we've still got work to do on this
2 pollutant as well, considerable work.

3 In terms of the sources of air pollution, the
4 motor vehicles on and off road mobile sources, in
5 essence, are about 80 percent of the pollution problem,
6 with the other 20 percent coming from industrial
7 sources, as well as residences and consumer products.

8 However, I want to focus in on one key pollutant
9 and that's oxides of nitrogen that comes from fuel
10 combustion. That is one of the main building blocks for
11 ozone or summertime smog. It is also a very significant
12 building block for our particulate problem.

13 This shows the top emission sources of oxides of
14 nitrogen. And as you can see, trucks are our largest
15 source, then off road equipment, then the ships that
16 come into our harbor.

17 And then the purple column that shows 26 tons is
18 what we call our reclaimed facilities, the facilities
19 that are in our cap and trade program for oxides of
20 nitrogen.

21 This represents the 300 largest stationary
22 sources.

23 Then, in terms of other source categories going
24 from there it isn't until you get to the other green bar
25 that's residential fuel combustion, at 17 tons, that you

1 have any stationary sources, the rest of them are all
2 mobile sources.

3 So, the key here is we're going to have to
4 really, in essence, revolutionize how we go about
5 transportation and how we address mobile source
6 emissions.

7 And that hits home in this next chart, and this
8 looks at the emissions in 2023, with the existing rules
9 and regulations, even including future effective rules
10 and regulations. And what this shows is to meet the 80
11 ppb Federal ozone standard, for which we've already
12 submitted our ozone plan, we need to reduce NOx
13 emissions by about two-thirds in the year 2023, beyond
14 all the rules and regulations that are on the books.

15 And there happens to be a tighter Federal
16 standard that was adopted, and that's 75 ppb, and we'll
17 have to jump up that level of control to nearly three-
18 quarters.

19 The other news is that the Obama Administration
20 announced, after years of study and, frankly, some
21 litigation, a reconsideration of the ozone standard, and
22 they plan to make a proposal next year, the U.S. EPA
23 will, and the range that's being considered will likely
24 trigger at least a 90 percent control of oxides of
25 nitrogen.

1 So, we're talking about doing business in a
2 very, very different way and that would have to be done
3 in the time frame of shortly after 2032 or a similar
4 time frame.

5 So, to me what that means is that it's all of
6 you work on renewable portfolio, and that sort of thing,
7 and you think about the State's goal of 2050.

8 The Federal government, through health
9 protective standards, is going to mandate the types of
10 activities that you plan for 2050, but 20 years earlier.

11 And so that means we need to be very wise in how
12 we go about planning our energy in the State, not only
13 electricity, but other fuels. And we need to think
14 about the investments today that in this short period of
15 a couple of decades will give us the adequate
16 infrastructure to supply our needs energy-wise, but at
17 the same time address our air pollution problems.

18 So, as I was just mentioning, there are
19 currently two Federal standards. As I mentioned, the
20 percent reduction and what this also shows is the
21 carrying capacity.

22 So, we're going from a projected carrying
23 capacity of 350 tons per day in 2023, with very
24 aggressive CARB and local district rules down to a
25 number that's about 90 tons. And then with this, what

1 we expect will be a further lowering of the ozone
2 standard, even lower than that.

3 So, when we presented this data to our board
4 about a year and a half ago, the board frankly looked at
5 me and said, well, heck, what we really need is an
6 energy plan. Because they recognized that if we're
7 going to control this key pollutant and it all comes
8 from fuel combustion, you're really talking about energy
9 because that's how the NOx is formed. And the NOx is
10 leading to the public health problems that we have
11 today, which have been documented to still be quite
12 substantial in spite of all of the progress that we've
13 made over the decades.

14 And in our discussions with our own governing
15 board, the way that we looked at this was we've
16 typically pursued climate change, local air quality,
17 energy and mobility as separate planning areas and
18 we've, in a way, been in silos.

19 And what we've been saying in recent months is
20 the silos need to come down and we need to be more
21 unified in our approach to how we address these critical
22 problems that we face at the state, national, and in the
23 case of climate change, international level.

24 So, we need to go more to comprehensive planning
25 that recognizes the needs in each of these discipline

1 areas so that, again, we also get a better economic
2 outcome by considering the investments and making the
3 investments wisely, and in a synergistic manner.

4 The term I like to use these days is let's go to
5 the supermarket and let's get a four-for-one sale item,
6 rather than paying for the same thing four times over.

7 So, that led our board to adopting an energy
8 related policy. And I have to tell you, in my nearly 30
9 years in this business and 15 years as the executive
10 officer of the agency, I thought this was mom and apple
11 pie feel good, have very little resistance. And I can
12 tell you that this policy adoption, which we did about a
13 year ago, received more opposition and criticism than
14 anything I can remember in recent years which, frankly,
15 was surprising.

16 We could have probably rolled it out in a
17 slower, more deliberative manner, but we didn't think it
18 was controversial. But we ultimately spent a lot of
19 time in discussions and hand holding, frankly, with
20 stakeholders.

21 It's quite clear from the air quality numbers
22 that what we need in transportation, as well as
23 stationary sources, is to get near zero and zero
24 emissions as best we can.

25 That means when we talk about electrifying

1 transportation, whether it's trucks or cars, or we talk
2 about fuel cells that those are the source of
3 technologies that we really need.

4 Just as your agencies are fuel neutral, we're
5 fuel neutral, but we're not air pollution neutral. So,
6 if some of the more traditional fuels can see rapid
7 advancements that can help us solve the problem in a
8 timely fashion, we're all in favor of that.

9 But looking at currently available technologies,
10 we certainly think that electrification and fuel cells
11 are going to be necessary and in very, very large use on
12 a per-vehicle basis.

13 Clearly, the types of programs that the PUC and
14 CEC have been involved in, in demand side management and
15 similar types of programs are absolutely critical.

16 Our board has tried to do our fair share in
17 promoting renewable distributed generation. We
18 allocated roughly \$14 million in the last year to
19 projects of that nature, to try and help spur that
20 market and confidence in those technologies along.

21 We also recognize in the policy, as has been
22 discussed here, that at least in the near term we're
23 going to need some fossil fuel power generation. This
24 is a question and I think you'll hear it from at least
25 one panel member on the next panel. We get asked, well,

1 why do you need any fossil fuel power plants? Why don't
2 you just go renewables? And, obviously, you've been
3 discussing that this morning.

4 But the policy recognizes we're going to have to
5 have some but those should be the cleanest found
6 anywhere in the world.

7 And we also recognize in the policy that to the
8 degree we have those plants, and there are mitigation
9 dollars associated with those plants, for example from
10 offsets, things of that nature, that those dollars
11 should go back into the community.

12 And in fact, under AB 1318, the Sentinel Plant
13 has paid \$53 million in mitigation and we're in the
14 process of reviewing proposals, and my board is
15 committed, even though the law didn't require it, has
16 committed to put all of the money back into the
17 Coachella Valley, where the Sentinel Power Plant is
18 located.

19 And, of course, continuing our efforts on public
20 education is going to be key so that there's an
21 understanding of what are the limitations in terms of
22 keeping the lights on, and the technology, and what is
23 the role of the public because the public, obviously,
24 has a very important role here.

25 In addition to policy statements, the board

1 directed us to go forward on a number of actions. We're
2 doing a wide variety of things on zero and near zero
3 emission technologies.

4 For example, we're working closely with the Port
5 of Los Angeles and Long Beach, the MTA, and a consortium
6 of others, including the State Air Board, to have a zero
7 emission truck demonstration using overhead catenaries
8 for goods movement. And these trucks can go on and off
9 the catenaries at will. And we think it's a promising
10 technology.

11 We're also involved in fuel cell truck
12 demonstrations, and so on.

13 The board, my board has a significant interest
14 in plug-in electric vehicles, whether they be hybrids or
15 battery electric.

16 We know that you all are working aggressively on
17 this topic. We're a member of the Plug-In Electric
18 Vehicle Collaborative.

19 We have been participating and we're very
20 interested in continuing to see the standardization of
21 charging installations to facilitate that technology.

22 And although the PEV Collaborative I don't think
23 is going to take it on, we think there are some issues
24 regarding rate structure that the PUC is going to need
25 to consider. And President Peevey has been present in

1 some of those meetings to hear about some of the
2 concerns.

3 We're also a supporter of biogas and other clean
4 energy sources provided they are low emission
5 technologies. And we have some problems today, but we
6 also see some advances on the horizon that will allow
7 biogas, for example, to be used in a very low emitting
8 fashion.

9 And of course I'm here today and participating
10 in your other forums because the partnership is
11 absolutely critical for the State to work its way
12 through these issues, and then our boards ask us to
13 periodically report back.

14 Now, I want to talk for just a second about
15 deregulation and I know I'm going out on thin ice
16 because it's a topic that folks, frankly, I don't think
17 want to talk about so much.

18 But I think, like with all things, there are
19 learning lessons that you have through experience and
20 that in government there's an obligation, even, that we
21 go back and revisit some of our past decisions and see
22 what ways we might make improvements.

23 So, prior to the deregulation, as you all know,
24 we had the investor-owned utilities -- actually, this
25 slide was updated, the right number is, I believe, 48

1 percent. No, on the next number it's updated.

2 The investor-owned utilities provided 77 percent
3 of the power before deregulation. And I'm all for
4 competition and I'm all for lower prices for energy, but
5 there are differences, at least in my dealings, when I'm
6 doing the permitting, between a California based
7 company, such as Southern California Edison, and some of
8 the private companies, privately held companies that are
9 producing power for us. So, a very different tone
10 sometimes in the meeting.

11 And we went from that sort of a situation to a
12 42 percent now being the private companies.

13 And the other thing that I think has changed,
14 which I've mentioned in other meetings and got very
15 quick push back, is the CEC used to do a needs analysis.
16 And we get asked, when we get power plants permits, is
17 that plant really needed? Does it really have to be in
18 this location?

19 And so in terms of the State's planning process
20 I'm not convinced that the current structure doesn't
21 need some significant improvement and that there aren't
22 things that happened in de-regulation that shouldn't be
23 revisited as we look to the future.

24 And we're really, as I talked to you about 90
25 percent NOx control, we're really talking about

1 revolutionizing what we do for energy in this State.

2 And you all are well underway with many of the
3 activities that you've been doing with AB 32, and
4 otherwise.

5 But we really need to take a long-term view,
6 make sure the right measure's going into place today to
7 set the foundation for where we need to be so that those
8 investments are wise investments.

9 Now, in terms of offsets, some of you may have
10 seen a chart like this before. This shows on the -- for
11 emission reduction credits, also known as emission
12 offsets, in the red bars what the supply is. All
13 entities outside of the South Coast we have a bank, as
14 you may be aware, but that's all ERCs held by everybody
15 else.

16 The green shows the price and the price has come
17 down in the last couple of years. But I'll tell you,
18 even if you look at the current so-called lower price,
19 you know, it's considerably, considerably higher than
20 you would see in any other air district, in some cases
21 by an order of magnitude.

22 Then if you look at the yellow bar on the far
23 right, and when you think of the Sentinel Power Plant,
24 and you think of the NRG facility, and you think of the
25 Walnut Creek plant in our district that's the number of

1 offsets that they needed. Obviously, exceeded supply,
2 which caused 1318, so Sentinel could come to our bank.

3 It caused Walnut Creek to buy Huntington Beach 3
4 and 4. So, they go through a PUC bid process. They
5 beat out a competitor and the only way they can build
6 their plant is to turn to a competitor to buy a 40-some-
7 year-old asset.

8 That at least tells me something's wrong.

9 And then in the case of NRG, they get left out
10 of the 1318 because they're trying to run their own
11 bill. And what happens to them is they go ahead and are
12 repowering some existing facilities.

13 On the issue of status of power plants, on this
14 chart, because you've had several charts kind of like
15 this today, and the numbers are a little bit different
16 because we're all setting our boundaries as to what's
17 included in the numbers a little bit different.

18 But these are facilities that are coming to the
19 South Coast District and for which we hold permits.

20 And so the main point on this slide is if you
21 look at the total number of additions in terms of
22 megawatts, then you look at the shutdowns plus the
23 megawatts that are subject to the OTC termination, what
24 you find is we're not adding a whole bunch of megawatts,
25 at least not coming through the AQMD permitting process.

1 It's a wash or a deficit. And that should cause us some
2 significant concern given that we do expect energy needs
3 to grow in spite of conservation and so on.

4 Now, I just would like to end with a couple of
5 slides. This first one I'm calling observations,
6 concerns. And this is me speaking. I didn't go to my
7 governing board and ask them what their observations or
8 concerns would be, but based on my 30 years, 15 years as
9 the executive officer.

10 I think we have to think about this outcome of
11 deregulation transferring a great deal of your ability
12 and my ability to help keep the lights on to a small
13 number of companies that are not as tightly controlled
14 as the investor-owned utilities.

15 Because the PUC doesn't have the authority and
16 the CEC, once you're issuing your permits then your
17 authority is much more limited.

18 And I think what we experienced this summer with
19 Huntington Beach 3 and 4 is a perfect example of that.
20 And the fact that we need to make some enhancements to
21 our energy planning process.

22 No one expected San Onofre to go off in the
23 manner that it did. But what if there had been an
24 earthquake or some other resources were damaged by
25 earthquake, or transmission lines by wildfires, and so

1 on, would we be ready?

2 And in the case of Huntington Beach 3 and 4 I
3 can tell you that if they're going to throw the switch
4 at Walnut Creek, and they promised their creditors that
5 they would, Huntington Beach 3 and 4 are gone.

6 Now, you may -- you know, we heard today, the
7 first time from a State agency, so it was important that
8 I was here to hear it, you may want to be able to spin
9 that turbine for certain reliability purposes, but in
10 terms of emissions they're not going to be burning fuel
11 there.

12 And the chart that I showed about the offsets
13 shows we don't have that solved. There's a problem
14 there that needs to be addressed. It isn't just a power
15 plant issue, it is potentially a much bigger issue.

16 But we certainly need, with the long lead time
17 necessary for power plants, to be able to ensure that
18 there are adequate offsets for the power plants that
19 need to be built.

20 Lastly, just the one key takeaway message, as
21 you've heard from me over the last few minutes, is let's
22 maximize our co-benefits. Let's address local air
23 pollution problems, whether they're meeting Federal
24 Clean Air standards or reducing exposure to toxic air
25 contaminants, or the State and locals desire to do our

1 fair share and make sure greenhouse gas emissions are
2 properly addressed.

3 But let's do it in a way that helps you with
4 energy security, energy diversity, create a better
5 certainty about cost, especially for important sectors,
6 such as the goods movement sector that is so critical to
7 the welfare of the entire State.

8 And with that, I'd be happy to answer any
9 questions you may have.

10 COMMISSION CHAIR WEISENMILLER: Well, again,
11 certainly we appreciate you being here today. I think
12 certainly the things that, as you said when we do our
13 planning, you know, we have to be planning for
14 contingencies.

15 And although I think in the 27 years of
16 operation we've always had at least one unit of San
17 Onofre operating, this summer we don't. You know, and
18 so that was, for whatever you want to call it, the black
19 swan, or whatever the horizon that we had to change our
20 thinking on, would assume that into the Huntington Beach
21 situation.

22 And I guess today we're at least starting the
23 dialogue to say that, you know, obviously Edison is
24 hoping that San Onofre 2 is back as early as September.
25 We don't know, you know, and we're not sure where San

1 Onofre 3 is. So, we at least have to start asking
2 ourselves what if?

3 And that's going to be, as you know, we take the
4 reliability responsibilities, you know, very seriously
5 and also understand the phenomenal air challenges here,
6 and the sort of transformation that's necessary.

7 And as you said, long lead times -- Cal-ISO did
8 a chart in August of last year that indicated that, you
9 know, we need to be making decisions now on power plants
10 if there's a chance of getting them online by, say,
11 2018.

12 So, you know, it is one of these things where
13 we're facing a number of real issues going forward and,
14 as you said, it's a very tough environment down here to
15 figure out how to keep the lights on that deal with that
16 transformation but, again, to move forward in a way with
17 all of us working together to pull this off.

18 And I mean part of the message, which I think
19 also really surprised all of us, is location really,
20 really matters on power plants, and that there are
21 certainly key locations in this area that we're trying
22 to understand, which are where we need to put the
23 plants.

24 And, hopefully, that will us to have the minimum
25 number down here going forward.

1 But we certainly look forward to working with
2 you on dealing with these challenging issues.

3 DR. WALLERSTEIN: Well, Mr. Chair, I want to
4 assure you, and everyone else up here at the dais, and
5 first let me say that we have an extremely good working
6 relationship with the CEC staff, in particular, and
7 obviously work as closely as we can with Cal-ISO and the
8 PUC.

9 Because I was involved in that last power crisis
10 and I did personally get a call from the Governor's
11 Office about, and it's a story some in this room have
12 heard me tell, about a negotiation that was going on in
13 the next room and what could we, at the AQMD, provide to
14 help the negotiation, so the lights could stay on.

15 That's serious business. All of us understand
16 very clearly the impact of the lights going out in terms
17 of public safety and health. But no Governor should be
18 put in a position where they're calling an executive
19 officer of an air district, asking for assistance like
20 that.

21 And in the case of Huntington Beach what we saw,
22 in my view, was we got lucky. We got lucky that when we
23 all did the analysis that there was a way to restart
24 that plant. We may not be that lucky next time. There
25 are Federal requirements that will be well above and

1 beyond anything that I can do, or any of you, or the
2 Governor could do, potentially, in some circumstances.

3 So, we need to be getting it right, as I know
4 all of you are working so hard to do.

5 The last thing that I'd like to say about
6 Huntington Beach, if I can just take one more second, is
7 the theoretical replacement to the broader, less-
8 educated audience, is the Walnut Creek project because
9 it bought 3 and 4 and the new owner, Mission Energy, is
10 shutting it down.

11 But when we have the technical discussion of
12 whether Walnut Creek is located in a place that if that
13 had happened a year earlier would have solved the
14 problems with San Onofre being down, the answer is no.
15 That as a resident of Orange County, under a series of
16 unlikely, but possible scenarios, my lights would have
17 gone out.

18 And so we need to think about, a little bit
19 more, and maybe that filters into the PUC process in
20 terms of where Edison is, and the CEC are having Edison
21 procure plants, and whether the locations are the
22 locations we need, especially with all the changes that
23 are going to occur due to the once-through cooling
24 requirements.

25 COMMISSION CHAIR WEISENMILLER: Well, I agree.

1 And the other thing is, obviously, we are starting to
2 look at options, some of the technical things. We don't
3 know whether they're going to work or whether we can buy
4 that equipment in time.

5 But we certainly have more time than we did last
6 spring to try to evaluate all the options and come up
7 with the best portfolio.

8 DR. WALLERSTEIN: We're here to --

9 COMMISSION CHAIR WEISENMILLER: If we need it.

10 DR. WALLERSTEIN: We're here to help and I'd
11 like to think that the U.S. Congress would not allow an
12 intolerable situation in California or Southern
13 California. But I just got back from DC, I was there
14 yesterday, and I can tell you from conversations that we
15 had with five members of the House, I'm not so sure.

16 COMMISSION CHAIR WEISENMILLER: I hope your
17 flight back was better than mine. Mine was like three
18 hours late so, anyway.

19 DR. WALLERSTEIN: All right. Thank you again
20 for the opportunity.

21 COMMISSIONER PETERMAN: Hi, this is Commissioner
22 Peterman here. I'll also just make the observation that
23 your presentation touched upon the importance of
24 thinking about our energy in a comprehensive manner,
25 both our transportation energy and our electricity

1 supply.

2 And, you know, one takeaway from your
3 presentation is that in order to meet some of these air
4 pollution goals, if electricity becomes a more prevalent
5 form of transportation energy, then we'll need to think
6 carefully, as well, about the emissions from those power
7 plants. I think both from a carbon stand point, that we
8 need to be better than we are now.

9 And, also, there are some local air quality
10 issues with power plants and if they're going to be
11 utilized more for transportation we want to be cognizant
12 of that. And that speaks to the need to even think more
13 carefully about the supply.

14 And we'll continue to have conversations about
15 transportation, I'm sure, and we're enjoying our
16 engagement with you on that.

17 CPUC COMMISSIONER FLORIO: Just one question
18 about offsets. Is it possible to create offsets in the
19 transportation sector that can be used in the power
20 plant sector?

21 I know that one example in San Diego where that
22 happened, but I don't have a good understanding of what
23 the options are.

24 DR. WALLERSTEIN: That's a great question and I
25 have a very specific answer for you. In the case of the

1 Sentinel Power Plant, they came to us and said we would
2 like to do transportation-based offsets, or generate
3 them by any other means. We're willing to spend \$50
4 million. Can you tell us what we should do that would
5 give adequate offsets to site the Sentinel Plant?

6 I put my staff to work. They dedicated their
7 staff. We spent probably six weeks and none of it
8 penciled out for the \$50 million that they said was the
9 critical financial point for whether their project was a
10 go or not.

11 So, the problem with the transportation offsets
12 at this point in time is that they're relatively
13 expensive. Now, that doesn't mean when you go through
14 the procurement process for the megawatts that you
15 couldn't account for that, but it means that at least in
16 the case of that particular power plant it just didn't
17 work.

18 COMMISSIONER PETERMAN: Two things. We're going
19 to have time for one or two audience questions. I
20 already saw one hand over there. Well, okay, you guys
21 have to figure that out.

22 But in the meantime, first we're going to hear
23 from Commissioner Catherine Sandoval. Welcome, thank
24 you for joining us this afternoon.

25 CPUC COMMISSIONER SANDOVAL: Thank you very

1 much. I had to go to another meeting this morning on
2 media diversity, and part of what we were talking about
3 was the outreach to the diverse range of Californians
4 who may be affected by the outage of SONGS, particularly
5 those in Orange County and San Diego County.

6 And I just really would like to thank you,
7 personally, and the Air Quality Management District, for
8 your assistance and cooperation in getting Huntington
9 Beach back online. We would truly be in a world of hurt
10 without that. So, really, thank you very much for that
11 cooperation.

12 DR. WALLERSTEIN: We were happy to do it and it
13 really, as was said earlier today, it really was a team
14 effort of the PUC, the CEC, and the Cal-ISO, and CARB,
15 and your chairman, as well as Chairman Nichols were both
16 personally involved to a very large degree.

17 COMMISSIONER PETERMAN: So, there's a gentleman
18 who had his hand raised first a while back. Do you
19 remember who you were, you were right in this area
20 somewhere. Yeah, so if you want to come and ask your
21 question? You have to come to this table and use the
22 mic.

23 MR. SAHLER: Yes, yes.

24 COMMISSIONER PETERMAN: If anyone else is
25 interested in asking a question, stand behind this

1 podium. We'll take as many as we can, but we'll keep it
2 short.

3 And also, we will not be taking the break in the
4 interest of time, so take a break as needed.

5 MR. SAHLER: Okay. Dr. Wallerstein, I
6 especially wanted to ask because I wasn't sure if you
7 were going to stay around until the very end.

8 You were very specifically saying you want to
9 make sure that there are emission credits around for
10 power plants. Did that mean that you were -- were you
11 actually almost implying that you were going to seek
12 regulatory relief from the Clean Air Act, or something
13 like that?

14 DR. WALLERSTEIN: No. What I was referring to,
15 and let me answer you also very specifically. We have
16 short-term needs that we're going to have difficulty
17 meeting, and I felt it was important for the
18 Commissioners to be aware of that.

19 In terms of the offset provision of the Clean
20 Air Act, we've had public meetings where we've talked
21 about the need, potentially, to revise the Clean Air
22 Act, and potentially even replace offset requirements
23 with something else that would be protective of the
24 regional air quality.

25 But that's not going to be something that's

1 going to be done overnight. It would be a multi-year
2 process and it would be a lengthy public process and,
3 obviously, also requiring an act of Congress.

4 At some point there just aren't offsets to --
5 and it's not just power plants, it's everything.

6 COMMISSIONER PETERMAN: And I'm going to take --
7 I'm going to take questions, first, from those who have
8 not spoken at all, so I'm going to turn to the third
9 person in line. Oh, did you? Okay, you all did. All
10 right, then. Please.

11 MS. DIDLO: I would like to mimic Commissioner
12 Sandoval's thanks to all of you, because I also live in
13 Orange County, so I'm happy that my electricity supply,
14 hopefully, will be more reliable this summer.

15 I would just like to make one comment and just
16 maybe confirmation from you, Dr. Wallerstein, that the
17 OTC plants don't actually need any offsets, other than
18 what's in your bank to rely on the 1304 rule.

19 DR. WALLERSTEIN: Well, this is actually an
20 issue that we're evaluating. And provision that was
21 relied on by the Walnut Creek plant has been in place
22 for a long time and something that, just as I'm
23 encouraging them to look at de-regulation, may be
24 something that we may ultimately need to look at.

25 MS. DIDLO: Thank you.

1 MR. DAVIS: Thank you. You may have heard my
2 last question to Mr. Berberich.

3 COMMISSIONER PETERMAN: And we're, I think, in
4 new questions, so if it's a new question, please offer
5 it. Please don't ask the same question you asked
6 before.

7 MR. DAVIS: I believe this is a new question,
8 but you can certainly be the judge of that, as you can.

9 Mr. Berberich said that it wasn't up to him
10 whether I asked whether or not if the -- if we needed
11 Huntington Beach again in 2013, we could use it. He
12 said the air credits are up, if I understood correctly,
13 and it wasn't up to him.

14 It sounds like it's not necessarily up to you,
15 but you referred to the Federal government.

16 MR. BERBERICH: No, no.

17 DR. WALLERSTEIN: Steve, if you want, I can
18 answer, give him my answer, but I think you gave him an
19 answer earlier.

20 My answer is simply this, if the Walnut Creek
21 plant fires up, which they're spending hundreds and
22 hundreds of millions of dollars to do, so it will, at
23 that moment in time 3 and 4 will be gone unless someone
24 wants to try to bring it back as a new power plant, go
25 completely through the permitting and somehow come up

1 with offsets.

2 MR. DAVIS: Yeah, but that would have been the
3 same question. My question was if we needed Huntington
4 Beach more than we needed Walnut Creek, could we not
5 start Walnut Creek and start Huntington Beach instead,
6 and would that expedite the process.

7 MR. BERBERICH: I'll take this.

8 DR. WALLERSTEIN: Sure, go for it.

9 MR. BERBERICH: Walnut Creek and Huntington
10 Beach are not electrically equivalent. Walnut Creek is
11 also needed for other purposes. So, we can take away
12 Walnut Creek and keep Huntington Beach, I'm not
13 suggesting we do that, and that will create other
14 issues. So, I want to be clear about that. Huntington
15 Beach is there, Walnut Creek is there for a very good
16 reason as well.

17 MR. DAVIS: No, but we could do it, I appreciate
18 it. That's it.

19 DR. WALLERSTEIN: But there's another piece of
20 information here and I know they need to --

21 COMMISSIONER PETERMAN: Yeah, please do.

22 DR. WALLERSTEIN: Walnut Creek is owned by
23 Mission Energy. Mission Energy owns Huntington Beach 3
24 and 4. Walnut Creek is the future and the investment of
25 Mission Energy. They're not desiring to keep 3 and 4

1 running and keep a \$700 million plus power plant sitting
2 there, not doing anything. So, Mission Energy is not
3 going to have motivation to have 3 and 4 running.

4 COMMISSIONER PETERMAN: Thank you. We'll move
5 on to the next question.

6 MR. DAVIS: Thanks for your patience.

7 MS. GILMORE: I was very happy to hear
8 everything you said. I live in Orange County, also, and
9 I attended the NRC -- am I too short or does this move?
10 Okay. I'll get my exercise here.

11 I attended the Monday NRC hearing, because you
12 were talking about the issue of the San Onofre's down
13 and we need to have a backup plan for that, and what are
14 the odds, and we didn't think it would happen.

15 Well, at the NRC hearing Monday the -- what's
16 his name -- I didn't write his name down. Mr. Warner,
17 from the NRC Audit Investigation Team, the head guy, he
18 said that the computer simulation for the steam
19 generator was off by 300 to 400 percent.

20 So, they build this, you know, three-quarters of
21 a billion dollar, four steam generators, and the
22 engineering technology was such that they're off 300 to
23 400 percent on the amount of vibration or, you know,
24 what the water would do and all that kind of stuff.

25 And now, we have these same engineers, or the

1 same people hiring these engineers, trying to figure out
2 if they can fix these things or replace them. I'm
3 concerned that the technology in the nuclear industry
4 right now, based on what we're seeing, that we may even
5 want to make a higher probability that these nuclear
6 plants are going to fail based on, you know, the facts
7 on the ground.

8 So, I urge you to make it a higher priority to
9 make sure that we have a backup plan, at least so plants
10 don't come down.

11 In addition, I read in your --

12 COMMISSIONER PETERMAN: Ma'am, do you have a
13 question? We'll have public comment at the end of the
14 day and happy to --

15 MS. GILMORE: Yes, I do have a question. In the
16 transmission planning, the ISO transmission plan, it
17 looks like they're prioritizing the once-through cooling
18 gas plants to go offline prior to the nuclear plant, and
19 becoming more dependent on the nuclear, if I'm reading
20 it right. And I would suggest maybe we want to consider
21 reversing that.

22 And also, I think in terms of solutions for the
23 air quality if we can do more distributed solar, as the
24 Sierra person was suggesting, that there may be a way to
25 expedite that. But we need a lot better rebates for the

1 public, we need long-term financing for the public.

2 COMMISSIONER PETERMAN: Thank you for your
3 comments, though, because there's --

4 MS. GILMORE: Well, it just seems you have, you
5 know, some problems with how to solve all this and it
6 seems like there's solutions. And I would love to be
7 able, as a citizen, to be able to participate more in
8 this. I, personally, have tried to get solar and do
9 some other things and I'm finding very -- a lot of
10 roadblocks. Anyway, I just wanted to make those
11 comments.

12 COMMISSIONER PETERMAN: Well, thank you for your
13 comments on that. As I mentioned earlier, the Energy
14 Commission has been holding workshops for the last while
15 on the --

16 MS. GILMORE: Okay. I just I'm not sure people
17 are aware of what's going on with the new plant, that it
18 isn't as reliable as people seem to think it is.

19 COMMISSIONER PETERMAN: Well, thank you for your
20 comment and we have that on the record.

21 MS. GILMORE: Okay.

22 COMMISSIONER PETERMAN: So, if there's a final
23 question, we'll take a final question. So, we'll have
24 public comment. This is the last question we'll have,
25 I'm sorry.

1 You can feel free to follow up and ask Dr.
2 Wallerstein questions afterwards, or staff. But then
3 we're going to move on to the next presentation, which I
4 think you all will be interested in because it's about a
5 high renewables case.

6 So, sir, final question.

7 MR. FREEMAN: My question is to the panel and
8 it's prompted by a good friend, Barry Wallerstein's
9 comments.

10 In looking at the future, if you look squarely
11 at the fundamental question of whether we should repeal
12 de-regulation, it was a failure. It is a failure and it
13 continues to be a failure. And you have no one who is
14 responsible for generation.

15 You can talk about it, you can cajole, you can
16 at the last minute try to get everybody to do something.

17 But it seems to me that if you're really looking
18 at the future of power, and let me tell you, if you're
19 consumer oriented, as Mr. Florio I know is, the system
20 we have now deprives the consumers of California of the
21 benefits in years '15 through '30, of these power plants
22 that will have zero fuel.

23 The cheapest power in California today was a
24 very expensive power plant when it was built, Hoover
25 Dam. These solar panels will last 30 years. They're

1 being paid out in 10 or 15 years. This system of de-
2 regulation is cheating the people of California out of
3 the benefits of these plants in the last 15 years,
4 unless you do something differently.

5 And it leaves you without the authority and the
6 ability to really go for the kind of green goals that
7 everybody keeps mouthing, and really will not be
8 implemented without the kind of authority that we had in
9 the good old days when there was a compact between the
10 utilities and the public.

11 The utilities had the responsibility for
12 adequate power supply and no blackouts, and they were
13 given cost plus.

14 My last comment, when are you going to start
15 telling the people of California that the price of
16 electricity is the equivalent of a dollar of gasoline.
17 It needs to go up so we can do all the things we need to
18 do, but it will still be a great bargain for them in the
19 future as we use electricity in our transportation
20 sector.

21 The politicians will never do it. It is up to
22 you folks to tell the people that the price of
23 electricity has to go up because, otherwise, you'll be
24 talking, yelling, and screaming, and none of these
25 things will happen.

1 COMMISSIONER PETERMAN: Thank you for your
2 comment. I think you've already just told them, so we
3 appreciate that and we'll keep passing on the word.

4 Dr. Wallerstein, thank you so much for your
5 participation. We'll move on to our next panel group.

6 MS. KOROSSEC: All right, our next speakers are
7 James Newcomb and Mathias Bell from RMI.

8 MR. NEWCOMB: Well, thank you very much. It's a
9 pleasure to be here. As you've no doubt heard, we have
10 a few fires underway out in Colorado, including the High
11 Park fire that's burning now on more than 100 square
12 miles. So, it's a welcome change, actually, to escape
13 the smoke and be here in Southern California.

14 And not coincidentally, our theme is to talk
15 about reinventing fire. That is some follow-on work
16 done, just in the last few months, to the work that
17 Rocky Mountain Institute published in reinventing fire,
18 last year, that looks at possible pathways for the
19 transition away from fossil fuels and nuclear to
20 renewables and efficiency broadly speaking.

21 The work that I want to speak about today is a
22 scope down at that analysis to look at Southern
23 California in particular, to look at resource portfolio
24 options, costs and, in particular, at the options that
25 may be available for pushing the envelope to meeting a

1 higher proportion of our future needs from distributed
2 resources, distributed renewables, efficiency, greater
3 electrification of vehicle transport, and the whole
4 portfolio of distributed resources that are transforming
5 the electricity system with, or without, our policy
6 choices behind it, in reality.

7 So, I want to share some of the analysis that
8 we've done so far. The final publication of this work
9 will probably not come for another three weeks or so,
10 but we were invited to give you a preview of the
11 analysis results that are substantially complete. And
12 look forward to receiving your comments and
13 collaborating with other researchers and analysts in
14 looking at the same issues here, in California.

15 Obviously, these resource issues are critically
16 important for our infrastructure choices because we're
17 making decisions about infrastructure that have
18 lifetimes of 20 to 50 years. And those infrastructure
19 choices depend on having a vision of where we're going
20 to where we can go, and where markets may take us as
21 distributed resources play a more substantial role as a
22 part of future supply portfolios.

23 So, this work focuses on Southern California.
24 By which we mean, for definitional purposes, everything
25 in California south of Southern California Edison's

1 service territory.

2 So, it includes municipal utility jurisdiction
3 or areas not subject to CPUC jurisdiction. And I'll
4 explain a little bit about how we put the analysis
5 together to look at that region.

6 We picked Southern California as a scope down
7 for reinventing fire for a variety of reasons. Partly
8 because of the policy leadership here and partly because
9 of the high penetration that's already being achieved
10 for solar PV, electric vehicles, and other distributed
11 resources in this region that put the region on a high
12 probability track toward what we think of as the pathway
13 towards reinventing fire.

14 We've looked at a 50 percent renewable
15 electricity scenario for 2030. It's a reasonable -- one
16 could argue about what the right interim step might be
17 between California's existing 33 percent goal for 2020,
18 and long-term goals necessary to achieve 80 percent
19 emissions reductions by 2050.

20 Eighty percent emissions reduction or in the
21 case of specifically what we're looking at here, 80
22 percent renewable electricity generation by 2050 might
23 have been a pretty heretical idea two, three, five years
24 ago, but it's increasingly less so today.

25 Partly, as we see increasing experience around

1 the world, in particular jurisdictions, of experience
2 with high renewable scenarios, and as analysis work
3 begins to accumulate as to what those kind of scenarios
4 might look like for the United States.

5 In 2011, Rocky Mountain Institute published
6 *Reinventing Fire*, in which we looked in considerable
7 detail at two scenarios for 80 percent renewable
8 electricity on a national basis by 2050.

9 Those two scenarios looked at alternative paths
10 to meet that goal. One in which the majority of that
11 renewable generation comes from large-scale, utility-
12 scale, and in large measure remote renewables.

13 And another described here, that we labeled the
14 "transform scenario", in which an increasing share of
15 that renewable generation comes at local scale.

16 In any case, we used the NREL ReEDS Model, which
17 is probably the most sophisticated tool of its kind to
18 look at scenarios of this sort. It breaks the country
19 down into more than 450 geographic regions. It looks in
20 detail at the operational and resource constraints and
21 opportunities for scenarios of this kind.

22 Just last week, and you're probably familiar
23 with this work, NREL published its Renewable Electricity
24 Future Study, culminating several years of work by NREL
25 and MIT, in conjunction with a number of the other

1 national labs, Oakridge, Pacific Northwest, Lawrence
2 Berkeley, and others to look at 80 percent renewable
3 scenarios, a range of high penetration scenarios.

4 But depicted here, 80 percent renewables by
5 2050.

6 Again, you'll see in this illustration by far
7 the biggest share of that renewable supply in 2050 comes
8 from wind.

9 So, there's slightly different portraits of
10 different groups to get to the same goal, but they set a
11 framework for us to think about options here, in
12 California, and in particular in Southern California.

13 To do the analysis that I'll speak about today,
14 we used a tool that's familiar to the California policy
15 analysis community, the CPUC RPS calculator, modified by
16 our analysis partner, which is Environmental, or E3,
17 Energy and Environmental Economics, to extend the
18 analysis time frame to 2030.

19 We built a set of policy and market assumptions
20 to drive those scenarios, which we'd be happy to talk
21 with any of you about.

22 And we adapted some of the tools for system
23 level capacity analysis to provide a more precise look
24 at high penetration renewable scenarios going forward.

25 I want to say a few words in particular about

1 one set of assumptions that go into that, which has to
2 do with electricity supply, costs, and potential. That,
3 in particular, is renewable energy cost assumptions.

4 Being from RMI, you might expect that we've used
5 some wild-haired, optimistic assumptions about how cheap
6 solar might be in the future. Here's the numbers that
7 we used.

8 We assumed that by 2030, rooftop solar
9 photovoltaics would cost \$2.70 per watt in the
10 commercial sector, \$3.18 per watt in the residential
11 sector.

12 So, here's a benchmark to compare that against.
13 Just reported last week, what were the costs in Germany
14 for installed -- a portfolio of installed rooftop PV;
15 \$2.24 a watt. Pretty amazing what scaling can do in
16 these markets.

17 If you back out the hardware, the German
18 hardware costs, and look at what the implied balance of
19 system soft costs for installing rooftop PV in Germany
20 are what are those today? They're less than 90 cents.

21 So, think about the leverage that policy has
22 over soft costs. When you get an economy of distributed
23 PV to scale and streamline, as Germany has in dramatic
24 fashion, the interconnection and permitting
25 requirements, you can get to 90 cents soft costs today.

1 And that's not 2030, it's not a bigger scale
2 than what Germany has today, it's what's reasonable and
3 in fact actual on the ground today.

4 So, if anything, I'd suggest our cost
5 assumptions are probably conservative for 2030 PV.

6 Yeah?

7 COMMISSIONER PETERMAN: If I may, I'm going to
8 interject with a quick question here, before we get off
9 this slide.

10 MR. NEWCOMB: Sure.

11 COMMISSIONER PETERMAN: So, when I was looking
12 at that I was thinking about what are your assumptions
13 around integration costs? At times I have trouble
14 looking at renewable costs around the capital, because I
15 don't think it tells the whole cost scenario, frankly.

16 MR. NEWCOMB: I'll talk a little bit more about
17 integration costs. And if we want to go into detail, I
18 might allow Mathias Bell to comment a little bit on
19 that.

20 COMMISSIONER PETERMAN: Can you speak to --
21 speak to where the model --

22 MR. NEWCOMB: Yeah.

23 MR. BELL: I can say it has a \$7.50 per
24 megawatt --

25 MS. KOROSEC: Is your mic on?

1 MR. BELL: So, it assumes a fixed -- it assumes
2 a fixed \$7.50 per megawatt adder. Which I think it is
3 standard for what was used in the past RPS calculator.

4 MR. NEWCOMB: Yeah, so we're pretty much using
5 the same kind of assumptions. We could have a long
6 technical discussion, I'm sure, about what those
7 integration costs might be.

8 And also interesting, I think, to look at
9 integration costs, again, in the context of some of the
10 national scope or other studies that adopt different
11 approaches that are actually building up those
12 integration costs from real system costs, storage costs,
13 reserves costs, and other components, rather than just
14 using a fixed adder.

15 But thanks, it's a great question, it's really
16 important to the analysis.

17 So, the second dimension of assumptions worth
18 calling attention to has to do with the technical
19 potential for solar PV, how much can we put on the
20 system.

21 Here, we drew on E3's previous detailed
22 technical analysis, which looks at that opportunity
23 statewide in California. We scale it down to the
24 Southern California region and looked in particular at
25 assumptions around Rule 21, or interconnection criteria.

1 How much solar can you put on a distribution feeder?

2 And, obviously, that has tremendous impact for
3 the distributed PV potential, ranging from at about six
4 gigawatts, at today's 15 percent threshold, to around 12
5 gigawatts. And bear in mind these are Southern
6 California numbers. To around 16 gigawatts if you think
7 about the total capacity, without back-flowing
8 distribution feeders.

9 Here are the scenarios we looked at. You can
10 think about them at a high level in terms of two key
11 parameters. The first is whether or not the San Onofre
12 is retired in 2022. That's the top two scenarios here.
13 And the bottom two scenarios assume it's retired in
14 2022.

15 The other assumption is to explore the balance
16 of large-scale versus distributed renewables. So, on
17 the left side of this matrix are the large-scale
18 renewable scenarios. On the right side largely, or
19 significantly more in terms of the balance of
20 distributed renewables.

21 We gave each of these scenarios names because
22 it's not just those two parameters, but actually a
23 bundle of policy assumptions that are embedded in the
24 model to look at those scenarios.

25 But we can take those apart individually and

1 look at the impact of individual policy measures as they
2 affect the outcomes.

3 So, here's the one look at overall results. By
4 2030, the model tells us that there are adequate
5 resources to meet a 50 percent renewables goal.

6 Obviously, the green part of these broken bars
7 comprises both large scale and distributed renewables.
8 And the ratio of those changes significantly among them.

9 And correspondingly, because of differences in
10 load factors, there's some differences in how much --
11 how much capacity is required to meet 2030 requirements.

12 We think about that in cost terms. The first
13 thing I want to say is be careful about assigning too
14 much weight to these cost assessments.

15 For one thing, these scenarios include no
16 specific assumptions about what costs might be required
17 to keep San Onofre online. We don't really know what
18 that number might look like today. We didn't try to
19 make a guess at it.

20 But we could take estimates for that and plug it
21 into this analysis. What we know is that these scenarios
22 are probably conservative in terms of the cost
23 assumptions about the cost of scenarios that keep San
24 Onofre running.

25 In any case, the total resource cost in 2030, of

1 these scenarios, ranges from \$35 to \$39 billion in the
2 year 2030. Not as dramatically different as many might
3 think that those scenarios might be.

4 And if we think about those implications in
5 terms of the average cost of loads served, we're in the
6 range of about 20 to 22 cents per kilowatt hour across
7 these scenarios. Relatively modest cost difference for
8 some pretty different scenarios in terms of their
9 implications.

10 It's also worth pointing out that if we think
11 about that in terms of the total costs over the period
12 from 2012 to 2030, the difference among these scenarios
13 is between about a one percent increase in costs in what
14 we call the advanced scenario, relative to a 33-percent
15 reference case, to about a seven percent increase in
16 cost for the transformed scenario, which both assumes
17 the retirement of San Onofre and significantly higher
18 shares of local distributed renewables.

19 All of these 50-percent scenarios achieve
20 substantial greenhouse gas emission reductions, ranging
21 from 42 to 57 percent across the scenarios and give us
22 an indication of the kind of progress that would be made
23 toward California's long-term emissions reductions
24 goals.

25 I want to emphasize that, as is always the case

1 with running models, there's a lot left out, a lot of
2 costs or considerations that should be important to
3 policymakers that are not taken into consideration here.

4 One of them is that, as I mentioned, we don't
5 know what it might cost to keep San Onofre online. In
6 this case, again we're looking at a long-term scenario,
7 so online beyond 2022.

8 Secondly, we have not explicitly tried to factor
9 into this analysis fuel price and supply risks. Higher
10 renewable scenarios have lower fuel prices than fuel
11 supply risks, and that's not quantitatively embedded in
12 the cost assumptions here.

13 Thirdly, we've not tried to take into
14 consideration, and it's difficult to do, differences in
15 reliability or resilience among these scenarios.

16 Increasingly, analysts are looking at resilience
17 as an important measure of how our electricity systems
18 might perform in the future, and there's growing
19 consideration being given to the value of distributed
20 resources, micro grids, new ways of actually operating
21 and managing the grid that may create substantially
22 greater resilience and create an electricity system that
23 has a set of characteristics quite different from the
24 operational characteristics of today's grid.

25 There's no explicit consideration given to local

1 job creation, which is probably significantly greater in
2 the distributed resources scenarios.

3 And finally, we've not taken an economic look at
4 the costs of over-generation or curtailment in the high
5 renewable scenarios.

6 So, there's a variety of things that are subject
7 or target for future analysis and we look forward to
8 working with others to kind of round out the analysis to
9 better understand those dimensions.

10 I want to add a couple of analytical caveats,
11 just to be careful that this work is not misinterpreted
12 or directed toward questions that it's not really well-
13 suited to address.

14 The first of them is that this is not a grid
15 study. We're not trying to speak to the issues in 2012
16 of how the grid in Southern California might operate, or
17 the tradeoffs between scenarios with and without San
18 Onofre.

19 This analytical tool that we've used is not
20 suited to that kind of analysis and we really, just to
21 be clear, are not at all looking at those questions.

22 We've assumed, as a conservatism, that a full
23 2,250 megawatts of gas-fired capacity is plugged into
24 this model in lieu of San Onofre in the non-San Onofre
25 scenario.

1 So, it's a rough cut way to look at grid
2 operations without San Onofre.

3 And finally, there are a variety of questions
4 around ramping that it's better for us to build analysis
5 around in the long term. As Mathias mentioned, the
6 CPUC's modeling tool has some beginning approaches to
7 those, including an integration adder, rather than
8 detailed modeling of those costs.

9 So, we're pleased to share that work in its
10 preliminary form. As I mentioned, we're wrapping up a
11 more detailed report.

12 We look forward to the dialogue, both with
13 policymakers, and utilities, and renewable energy
14 developers, and other stakeholders around these
15 possibilities.

16 And in particular, it's our view, as I
17 mentioned, in emphasizing the importance of what's
18 happening in Germany that ongoing, local forces that are
19 affecting the cost of distributing renewables mean that
20 the game, or the balance between what happens on the
21 customer side and what happens on the grid and the
22 utility side is not totally in the province of either
23 utilities or the State policymakers.

24 Thanks very much.

25 COMMISSIONER PETERMAN: Thank you very much.

1 Appreciate the work that you're doing and the
2 presentation. And I think, in particular, the
3 analytical caveats that you raised, particularly some of
4 the nuances related to ramping, as well as SONGS
5 retirement, will be important to explore going forward
6 because I see those as major uncertainties.

7 I have just one clarifying question; what's your
8 assumption around the rest of the State, as well as the
9 rest of the WECC, what fate are they in, in this 50-
10 percent renewable scenario?

11 MR. NEWCOMB: Yeah, so for analysis purposes we
12 took the CPUC calculator and ran it on the statewide
13 basis, with a 50 percent statewide goal and taking -- we
14 took San Onofre out, taking all the nukes in the State
15 out, at their re-licensing dates.

16 Then we took a snapshot, because we really
17 wanted to look in detail for some other policy and other
18 purposes at Southern California.

19 And we do -- Mathias, refresh my memory, there
20 is a slice of renewable electricity imports that's
21 allowed as part of the meeting the 50-percent goal.

22 COMMISSIONER PETERMAN: Any other questions from
23 the dais? Thank you very much.

24 I'm going to ask the next panel to assemble
25 because we have a number of exciting speakers and I want

1 to make sure they get their full time and that, really,
2 sufficient time for audience comment and questions at
3 the end.

4 As you all come up and assemble, first of all
5 thank you for being here, looking forward to the
6 discussion.

7 We'll ask that -- I know you all have
8 introductory comments to make. Please cover what you
9 need to, if you can keep it less than the allocated ten
10 minutes that will leave more time for the fruitful
11 discussion, which is always the fun part of the day.

12 All right, Mike, let's get started.

13 DR. JASKE: I just wanted to get John White to
14 appear, that would be helpful.

15 COMMISSIONER PETERMAN: We can start with
16 someone else, then.

17 DR. JASKE: Yes.

18 COMMISSIONER PETERMAN: He'll jump in.

19 DR. JASKE: So, my role here today is to
20 essentially try to keep you on track time-wise, and I'm
21 going to call you in the order printed in the agenda,
22 with the exception that Mr. Avery has asked to go first.
23 So, sir, proceed.

24 MR. AVERY: Thank you. I have a commitment this
25 evening and I have to get back to San Diego. So, to the

1 extent there are any questions I'll be happy to host
2 those.

3 And with the, I guess, desire to try to keep
4 this moving quickly, I'll limit my comments to perhaps
5 just addressing some of the things we've heard here
6 today.

7 From the stand point of what is happening at San
8 Onofre, I will leave that to my colleague to the right,
9 who I think will probably address San Onofre at large.

10 What I'd like to talk about is what we're doing
11 in San Diego because of what's happening in San Onofre.

12 First off, I'd like to say and announce, to the
13 extent that people don't already know, that the Sunrise
14 Power Link is in service and has been energized, and is
15 a significant resource for alleviating the congestion in
16 the San Diego Region.

17 From the stand point of what does Sunrise do,
18 essentially the biggest thing it has done is allowed the
19 ISO to enable the South Bay Power Plant to be retired.
20 And that has removed from the congestion figure well
21 over \$50 million per year.

22 Now, building upon that, San Diego started the
23 plan roughly ten years ago, almost to the day, on what
24 we can do to eliminate for once-through cooling in our
25 region. And we set out with an aggressive plan to

1 create the loading order that has been adopted by the
2 rest of the State, which was to pursue all energy
3 efficiency, demand response, renewables and then, and
4 only then, looking at fossil-based alternatives as a
5 solution.

6 We have gone from, in San Diego, roughly less
7 than half of one percent renewable in our portfolio
8 eight or nine years ago, to last year breaking the 20
9 percent mark. And that was a major achievement within
10 San Diego, but we're not stopping there.

11 We set a goal for ourselves to target about 40
12 percent renewables in our system as a way towards
13 mitigating the need for fossil-based resources to serve
14 our loads.

15 Now, with SONGS not being available this summer,
16 this really raised the interesting question of what do
17 we do both short term and long term, and we have been
18 working very closely with Southern California Edison and
19 with the ISO towards finding solutions to help ensure
20 that we have the ability to meet the requirements of our
21 customers this summer.

22 And I think we have answered some of those
23 questions, but you've also heard some of the challenges
24 that are going to be there.

25 The number one challenge that we did see is

1 really going to be weather. For San Diego, for every
2 time we get about one degree over the average
3 temperatures in San Diego, it equates to anywhere from
4 60 to 100 megawatts of additional load on our system.

5 And if we have an average summer, we have ample
6 supply. If we have a one in ten summer, we believe we
7 have ample supply assuming we keep all of the older-
8 based power plants online.

9 If we have extreme hot weather it's going to
10 become, of course, a very tight summer and we're doing
11 everything we can to ensure that all of our units are
12 available. The units that we own only represent about
13 25 percent of the generation in the San Diego Basin.

14 And I know that the CPUC and the ISO have been
15 working with all of the generators in the region to
16 ensure they go through their maintenance cycles and are
17 prepared to contribute to these loads of the summer.

18 In addition, what we've done is put up what I
19 call a "swat team," three of them within our company to
20 deal with, number one, what can we do with respect to
21 additional energy efficiency and demand response
22 programs both in the short term and the long term. It's
23 part of the things that we can do to incent additional
24 response in these areas for this next summer, and then
25 the summer after, and then longer term as well. I think

1 that's critically important that we put a renewed
2 emphasis in that area.

3 In addition, we've put together a team to
4 identify what can we do with respect to transmission
5 reinforcements in our area?

6 One of the biggest problems in San Diego has
7 been congestion. And congestion, at the highest point,
8 exceeds over \$200 million a year in added cost to our
9 customers.

10 And congestion isn't just a function of not
11 having the ability to move energy around from discrete
12 regions, it also has do to with the ability to move
13 energy around within our region.

14 One of the things that we see today is the need
15 to keep portions of the Encina on during off-peak hours,
16 because it is not a quick start, quick ramp machine from
17 a zero basis.

18 So, that translates into very high heat rates
19 during the evening hours and the early morning hours
20 when this is essentially not needed.

21 Now, to combat that we've put forth a plan
22 towards -- a secondary plan, once we got rid of the
23 South Bay Power Plant, to find a need to eliminate the
24 potential to have the Encina Power Plant on our system.
25 Again, this is one of the older once-through power

1 plants.

2 And with that we put forth a plan with the CPUC
3 some time ago, and they're working on that right now,
4 with respect to the three or four additional peakers in
5 the region which will be used, primarily, towards our
6 setting needs for the once-through cooling facilities in
7 the longer term basis.

8 We also heard a lot about the air quality
9 issues. And in San Diego that's a critical issue, as
10 well, it's not just in the L.A. Basin. And it also has
11 to do with what we're doing with respect towards the
12 promotion of additional electric vehicles in our region,
13 and alternate fuel vehicles in our region.

14 We have, right now, well over 1,500 electric
15 vehicles just that have been added in the last 12
16 months, or less than 29 -- or 18 months. I'm happy to
17 say I'm one of those with an electric vehicle and I
18 actually placed an order for a second one. I truly
19 believe in this.

20 But it really raises an interesting challenge.
21 Because of the work we've done with the CPUC in putting
22 forth some aggressive rate structures, we've been able
23 to incent, so far, 86 percent of that charging to occur
24 during super off-peak periods between midnight and 5:00
25 a.m., with only five percent of that charging hitting us

1 during the peak hours.

2 If you were to look at Tennessee, where they
3 have an abundance of electric vehicles, because they
4 manufacture electric cars in Tennessee, they're almost
5 exactly the opposite. The numbers of cars that charge
6 on-peak is almost the amount that we see charging off-
7 peak.

8 And one of the things that's concerning us is
9 not being able to get in and actually provide charging
10 infrastructure for our customers, is that we are having
11 some of our customers do that, themselves. But they're
12 using it as a marketing ploy.

13 In other words, come and park at Macy's, plug in
14 your electric car and charge at the time of peak.

15 Now, to put this into perspective, we have seen
16 several forecasts that say we're going to have between
17 200,000 and 250,000 vehicles, electric plug-in vehicles
18 in San Diego by 2020.

19 Now, if you were to get 86 percent of that
20 charging in the super off-peak period, that equates to
21 100 megawatts of peaker plants we need to satisfy that
22 load.

23 Everything else can be served with renewable
24 resources and with the utilization of base load machines
25 that are sitting idle during off-peak periods.

1 If, however, we get the other direction, 86
2 percent of that hitting us or 96 percent of that hitting
3 us during on-peak periods, I need the equivalent of
4 2,000 megawatts of generation in San Diego. And I don't
5 want to be before any of you asking for 2,000 megawatts
6 of additional generation.

7 So, we have to do everything in our power to
8 incent and to push all of these electric vehicles to
9 charge when there's an abundance of energy available,
10 and I think that's critically important.

11 We've also heard a lot of discussion here about
12 what is it we need? Do we need rooftop solar, do we
13 need desert-based solar, do we need wind resources?

14 I'm here to say we need a bucket of all of them.
15 I will tell you, though, that the relative cost of some
16 of these facilities, whether it is wind-based resources,
17 or larger-scaled solar resources, whether they're on a
18 distributed basis or whether they're in the desert is a
19 mere fraction of the cost and does not have the physical
20 implications of the electric grid that rooftop solar
21 has.

22 Again, I'm not suggesting we not promote and
23 continue to do rooftop solar, but it does not provide
24 the capacity we need to meet our system requirements,
25 especially when we see that our peak load is really

1 trending to be 8:00 p.m. at night.

2 In fact, on the residential circuits it is
3 already occurring at 8:00 p.m. and solar on rooftops
4 does nothing to satisfy that requirement.

5 And the next thing we saw, we saw some charts
6 just a moment ago about potential penetration of how
7 much we can handle in the way of rooftops before we get
8 into reverse flow on our grid.

9 Reverse flow is not the issue. The issue is the
10 instability that can create on the grid. When we get to
11 15 percent penetration we already see voltage swings on
12 our grid that violate the CPUC regulations and the State
13 regulations for what we must maintain in voltage
14 stability on our distribution grid.

15 So, we need to be able to apply the same
16 standards to distributed generation that we are able to
17 do through the standards onto the rooftop installation.
18 So that the inverters that connect to our system,
19 whether it's behind the meter or in front of the meter,
20 does not impose negative implications to the
21 distribution grid.

22 And one of the reasons that is so critically
23 important is if we don't do it, we could be spending
24 billions upon billions of dollars to fix the
25 distribution grid, which is just solely unnecessary.

1 So, I think we need to continue to look at all
2 of the technologies, but we need to advance the
3 technologies to take advantage of what is out there, as
4 opposed to continuing to build the stuff that is
5 currently in the grid overall.

6 And with the notion of some of the charts you
7 saw with respect to relative figures of costs, the cost
8 of putting solar in a distributed basis, in other words
9 larger systems on our distributed grid, is a mere -- it
10 is, actually, a pricing which we saw for the projections
11 of the rooftop solar in 2030. We're already seeing bids
12 that are below \$3 a watt to put solar out on a
13 distributed basis in our distribution grid.

14 And I would caution one thing. We set so much
15 at the side about the notion of let's try to keep solar
16 at -- well, let's try to keep distributed generation at
17 20 megawatts or less. If we can fit 25 megawatts on a
18 distribution circuit because it's adjacent to a
19 substation, we shouldn't be carving that out and say it
20 doesn't qualify as distributed generation, it just
21 doesn't make sense.

22 We have some projects where we can get 50
23 megawatts adjacent to a substation, and it provides the
24 same exact benefits of something that is 19.9 megawatts,
25 why shouldn't we be allowed to pursue that.

1 The last thing I'd like to touch real quickly is
2 the notion of some of the things we heard about who
3 should be in the role of planning for where resources
4 are at?

5 I would suggest and one of the things we've been
6 trying to work with some of our merchants and
7 independent generation developers is it would probably
8 make sense if the utility took a role in helping to site
9 a cluster of facilities. Not that we have to own it,
10 but that we can offer that site up for the development
11 of the independents to go into a discrete location. It
12 is the best way to ensure that we can get the best
13 resources at the best location on our grid.

14 And I can tell you that I look at that not just
15 from San Diego's stand point, but I'm also the Chair of
16 the California Transmission and Planning.

17 And one of the things that we are desperately
18 concerned about is if generation is allowed to go just
19 where generation wants to go, whether it's fossil based
20 or renewable resources, we're going to continue to have
21 to build transmission to gain access to it to bring it
22 to the grid.

23 Thank you.

24 MR. STARCK: Good afternoon. My name's Les
25 Starck, I'm Senior Vice President for Regulatory Affairs

1 for Southern California Edison.

2 And at the very beginning I'd like to thank you
3 for this forum today. It's great to see some
4 collaboration amongst all the resource agencies in the
5 State. And it's very important to go off and coordinate
6 all our efforts because there are a lot of complicated
7 things going on in the electric utility system today.

8 We heard a lot of things today that I'd like to
9 comment on and I'm going to reserve those for comments
10 that we'll file, that are due on July 13th.

11 But there are a few things that I wanted to
12 raise today that I heard about. The first, Mr. Vidaver,
13 from the California Energy Commission, today, he talked
14 about -- there was a slide in there that talked about
15 merchant power plants in the State of California that
16 are at risk. They're at risk because they don't have
17 power purchase agreements and their revenue stream is
18 very uncertain.

19 And the concern is, of course, that without a
20 secure revenue stream the power plant is just going to
21 go away, it's going to close down, and it may be needed
22 in the future.

23 And we agree with that concern that merchant
24 power plants may go away.

25 And what we really, truly believe is that the

1 CPUC needs to focus on establishing a longer term,
2 durable, forward-procurement mechanism for obtaining
3 generation in the near term and the longer term.

4 There is no competitive market today that exists
5 for long-term capacity requirements for local or needed
6 new generation.

7 Instead, the CPUC has relied upon the IOUs to
8 provide the needed financial support to maintain
9 existing generation and to secure new generation, and we
10 do that through power purchase agreements.

11 And we believe that the Commission needs to
12 establish a durable forward-procurement mechanism going
13 forward. That will ensure that power plants will be
14 there when we need them.

15 Second, Mr. Millar, from the Cal-ISO, he spoke
16 about the need for 2,400 megawatts in the Los Angeles
17 Basin to replace OTC units. Okay.

18 Now, at Edison we generally agree with the
19 CAISO's transmission planning and related analysis which
20 identified a need for approximately 2,400 megawatts of
21 generation in the L.A. Basin. We agree with that, which
22 is necessary to replace once-through cooling generation
23 that is facing the State Water Resources Control Board
24 compliance deadlines.

25 We believe that their long-term study is a good

1 first step toward identifying cost-effective solutions,
2 but it only considers once-through cooling and
3 generation options at existing sites.

4 Solutions should be cost-effective and consider
5 all other options that are available, which might
6 include a transmission project and additional types of
7 generation at the other locations.

8 So, we're encouraging the Cal-ISO to be looking
9 at more options than the ones that were identified in
10 their study.

11 And we also believe that there needs to be an
12 appropriate cost allocation for all entities that
13 benefit from grid reliability they're provided by the
14 new location re-constrained resources and renewable
15 integration generation.

16 We think cost allocation to those particular
17 customers that benefit from these costs, they ought to
18 be paying for them.

19 Third, Mr. Wallerstein, from AQMD, he spoke
20 about air quality concerns and he spoke about how the
21 availability and the cost of emission credits could
22 impact economic growth in Southern California, he
23 expressed that concern.

24 Edison, we really agree with that concern. The
25 existence of PM10 emission reduction credits for siting

1 generation in the South Coast Basin is a problem and
2 with major uncertainties.

3 Okay. And we see it as there are very
4 significant uncertainties about the availability of
5 these ERCs, and it's going to be very important that
6 they be available, or some other mechanism be available
7 so that power plants are going to be constructed.

8 COMMISSIONER PETERMAN: Hold on a second.
9 Everyone's line muted? We're just pausing one second.
10 We've got some noise in the room from the phone that
11 allows those on WebEx to hear this dialogue. And so
12 let's just take a second and make sure we all don't miss
13 your words.

14 All right, Mr. Starck.

15 MR. STARCK: Okay, finally, Dr. Jaske of the
16 CEC, he had a slide there that talked about the
17 limitations that ratepayers have. There's only so far
18 they can go in terms of their rates and I just have to
19 tell you that we wholeheartedly agree.

20 In California, at least in our service
21 territory, you know, Edison, we're subject to a number
22 of cost pressures. We've got RPS33, we've got once-
23 through cooling, we're making transmission investments
24 for renewables, we're making investments in distribution
25 infrastructure to go off and reverse the aging that

1 we're seeing in our system.

2 All of these have cost pressure on our rates.

3 And in California, we are so good at being energy
4 efficient, our sales growth in the future is fairly
5 flat, so rates are going up. And we are concerned that
6 eventually we may have ourselves a real rate revolt, if
7 we're not careful.

8 So, as we all consider the solutions today to
9 addressing longer-term needs for keeping the lights on,
10 we want to make sure that we keep our ratepayer impacts
11 in mind.

12 So, that's all I have for today, thank you.

13 MR. GEESEMAN: Commissioner Peterman, Chairman
14 Weisenmiller, distinguished guests from the Public
15 Utilities Commission, I'm John Geeseman.

16 MS. KOROSEC: Your mic's not working.

17 MR. GEESEMAN: I'm John Geeseman, I'm an
18 attorney representing the Alliance for Nuclear
19 Responsibility. I commend you for holding this meeting,
20 it's a long overdue follow up to your 2008
21 recommendation that California needs a plan B in case we
22 experience extended outages at the State's nuclear power
23 plant.

24 Looking at you this afternoon, I realize none of
25 you were in your current positions in 2008. And I do

1 know from personal experience there's something about
2 the inertia and amnesia that institutionally affects big
3 government that makes those recommendations oftentimes
4 go into the memory hole.

5 I thank the Energy Commission in its adoption of
6 the 2011 IEPR for repeating the 2008 recommendation
7 because nothing had been done between 2008 and 2011.

8 I note that one of your vacancies on the
9 Commission has been filled since your adoption hearing,
10 but let me repeat what I said then.

11 My client looks forward to the day when the
12 Governor and the Senate Rules Committee considers the
13 work of the Energy Commission of sufficient importance
14 that it is never allowed to have a position vacant
15 longer than the 30 days originally envisioned by
16 Assemblyman Warren and Senator Alquist.

17 I have three major points to address the
18 challenge of planning for the contingency of extended
19 outages at the State's nuclear power plant.

20 The first is we need to recognize the remarkable
21 similarity of our system of utility governance to that
22 in Japan. In Japan, they refer to it as the
23 "numakigari" system. Here, in a more vulgar way, we
24 call it a revolving door.

25 I say that more as an anthropologist than as a

1 muckraker. It's often reported, the President of the
2 Public Utilities Commission is a former President of
3 Southern California Edison.

4 You don't read it as often, but the General
5 Counsel of the Public Utilities Commission is a former
6 PG&E attorney. The Board Chair of the ISO is a former
7 President of Southern California Edison.

8 One of the ISO's five board members, Southern
9 California Edison's former pollster.

10 The President of San Diego Gas & Electric is a
11 former Public Utilities Commissioner.

12 The Governor's Chief of Staff, former PG&E
13 executive.

14 One of the Energy Commission's most accomplished
15 chair was a former PG&E executive and she was the chair
16 when you originally made that 2008 recommendation about
17 the need to plan for extended outages at the State's
18 nuclear power plant.

19 The most prominent example of our "Imahugari"
20 system, the former CEO of Edison International was a
21 former President of the Public Utility Commission.

22 My second point is that this system of
23 government imposes extraordinary requirements of
24 transparency and an exaggerated requirement to challenge
25 each and every underlying assumption in our planning

1 process. And, frankly, a high level of candor about the
2 uncertainty that that analyses invariably faces.

3 And to be honest, given human nature, we don't
4 always live up to that. Somehow we have adopted the
5 assumption that SONGS and Diablo will run 24/7
6 indefinitely and that it is within our institutional
7 discretion to determine whether they do or not.

8 I don't think, if you look at the experience of
9 the nuclear power plants in this country or around the
10 world, barring Shoreham or Rancho Seco, the failure mode
11 is seldom a discretionary choice.

12 Our once-through cooling policy assumes both
13 plants operate 24/7. Our AB 1318 analysis assumes both
14 plants operate 24/7. Even our AB 32 scoping plan
15 assumes both plants operate 24/7.

16 The peril of this kind of intellectual blind
17 spot only becomes apparent when things go wrong. After
18 15 years of capital investment decisions being made by a
19 so-called independent grid manager, and I'm sorry Mr.
20 Berberich is not here to hear this, but after 15 years
21 of having decisions as to how to expand the grid, where
22 to expand the grid, how much money do we spend on
23 expanding the grid how could an entire region of our
24 State become dependent upon the operation of a single,
25 2,250-megawatt power plant? How can that happen?

1 And my third point, never forget the second rule
2 of Holt. Everybody knows about the first rule, you stop
3 digging when you find yourself in a hole.

4 But the second rule is you build yourself a
5 ladder. And I emphasize the word "build" and I suspect
6 Mr. Berberich would have appreciated that.

7 There's a reason that five, six years ago the
8 Federal government declared the entire seven
9 Southernmost counties in California a transmission
10 corridor of national significance.

11 The California Energy Commission is the only
12 State agency in the United States to endorse that
13 federalization of transmission siting jurisdiction
14 because our system, inside California, was so
15 dysfunctional.

16 The NERC/FERC report on last year's San Diego
17 blackout describes what's known in the professional
18 trade as a cluster-funk-shit.

19 Frankly, I think it would be quite a bit wiser
20 if that had addressed some of our hardware problems as
21 well. You need to have automated responses to these
22 contingencies that do come up.

23 And I commend my friend Jim Avery, and his
24 company, for their perseverance for seeing through the
25 Sunrise Power Link. But I believe their job is only

1 half done, they have yet to address improving the
2 north/south linkage between the Edison system and their
3 system.

4 And I think that some of you, such as
5 Commissioner Florio, can remember ten years ago when the
6 ISO recommended, on its own initiative, that that
7 strengthening take place.

8 San Diego pursued a project known as Valley
9 Rainbow. The PUC failed to approve it, but on a three-
10 to-two vote.

11 To my surprise, that question has never been
12 revisited. I think the San Diego blackouts should have
13 caused a revisiting.

14 If you will remember, the administrative law
15 judge in that proceeding framed the issue in a classic
16 California way. He said, "the proponents of the
17 transmission line argue in favor of a ten-year planning
18 horizon because they say that if you restrict your
19 analysis to five years no project will ever be found
20 needed."

21 "The opponents of the project insist that you
22 need to have a five-year planning horizon because if you
23 extend it to ten years, no project would never been
24 found unneeded."

25 So we in our ignorance, proceeding down a path

1 where we thought, arrogantly enough, we could manage a
2 just-in-time infrastructure policy.

3 And I remind you, this analysis was done in
4 2003. It doesn't matter if you used the five-year or
5 the ten-year planning horizon, we're in the soup now.

6 And I would suggest to you a proper evaluation
7 of our grid requirements would greatly lessen our
8 perception right now of the indispensability of San
9 Onofre to Southern California.

10 I'm still a believer in the Energy Action Plan
11 and the Loading Order, which has been the cornerstone of
12 the State's energy policy for more than ten years.
13 Uncommitted efficiency, as Mr. Jaske and Mr. Vidaver
14 characterized it on their slides.

15 Demand response, distributed generation, those
16 have been slogans for the last decade. I would suggest
17 to you, going forward in this IEPR update, it's time to
18 put up or shut up.

19 There's been too much easy talk, too much
20 sloganeering, too much feel good policy, not enough
21 delivery.

22 And I mean delivery in terms of measurement of
23 energy and capacity which the ISO feels, in its
24 management of the grid, it can rely upon.

25 Ted Craver, the CEO of Southern California

1 Edison International, told the *L.A. Times*, a couple of
2 weeks ago, that the decision to reopen San Onofre would
3 probably be the biggest decision he makes as the CEO.

4 Frankly, there's probably a little bit of
5 Freudian slippage in Ted's remarks. Everyone in the
6 room knows that the decision to reopen will not be
7 Ted's, alone.

8 What I think he meant to say was the decision
9 whether or not to reopen it. He's likely to have an
10 outside influence on at least the negative side of that
11 question.

12 But as we go forward this Commission, the Public
13 Utilities Commission, the California ISO needs to come
14 to grips with the fact that these plants may not be
15 available indefinitely and they may be gone for extended
16 periods of time.

17 The people of California look to you to plan for
18 that contingency. Thank you for allowing me to
19 participate.

20 COMMISSIONER PETERMAN: Thank you. As a former
21 Energy Commissioner, yourself, I appreciate you keeping
22 some of our institutional memory alive.

23 MR. WHITE: Thank you, Madam Chair, Members, I'm
24 John White, with the Center for Energy Efficiency and
25 Renewable Technologies.

1 I also am grateful for the opportunity to
2 participate; it's been an interesting day.

3 I especially want to thank Commissioners Florio
4 and Sandoval for joining this workshop.

5 One of the things that I've been spending a fair
6 amount of time on, on the wildlife issues associated
7 with renewable projects in the desert and one of the
8 lessons of our wildlife community is the need for
9 connectivity between the areas where the species are.
10 And we need the connectivity more than ever between and
11 among our agencies, and between and among the community
12 that's affected.

13 And so I commend you for showing up and being
14 here with us all. And it shows that the importance of
15 the IEPR as a forum and as an opportunity for a
16 legitimate exchange is really valuable.

17 And I think that's testimony to, Commissioner
18 Peterman, your leadership, and that of the Chair of the
19 Commission.

20 A couple of thoughts comes to mind in the short
21 time that I have from today's discussion and from the
22 comments received earlier.

23 I think that when we look at all this modeling
24 that goes on about what it will take to keep the lights
25 on in light of the shutdown and if you look below the

1 surface a little bit, one of the things that troubles me
2 about the ISO's analysis is they don't seem to want to
3 count on or rely on energy efficiency, demand response
4 or distributed resources. Mr. Berberich said these are
5 nice, but they aren't dispatchable, I don't control
6 them.

7 And it's almost like these assumptions are based
8 on the idea that we have to plan for the failure of
9 energy efficiencies to be achieved.

10 And I don't think that's the right approach. I
11 agree with former Commissioner Geeseman that the loading
12 order needs to be a living trust that we pursue with all
13 deliberate speed and all vigor.

14 And it's not an afterthought, it's not something
15 nice that we sprinkle on the cereal in the morning, this
16 is the core of what we're doing, not just on the side.

17 And in the case of demand response we need to
18 rethink it for purposes of the future. It isn't just
19 the hot summer day where we're going to need more
20 flexibility on the grid in terms of the load, we're
21 going to need it in unusual times of the year, in the
22 spring mornings and others. So, we need to look at what
23 new kind of demand response we need and look at some
24 other places in the country.

25 I just heard from a friend today, in Colorado

1 they give the \$60 rebate check to the customers on
2 Thanksgiving and they offer them the opportunity to
3 donate it to a food bank.

4 Okay. But the point is they get the community
5 involved. If we tell the people in Southern California
6 that we've got a problem and you all need to help, and
7 the DR becomes not just some mechanical, commercial
8 thing, but a community response I think we could do more
9 with it than we've really found up to now.

10 Secondly, we have to pay attention to the
11 infrastructure that we say we need, but it is lagging
12 behind.

13 Path 42, to connect Imperial to the Edison
14 system, represents an unusual cooperation between Edison
15 and IID. Edison's doing its part, but the IID part is
16 lacking, ironically, because the utilities haven't
17 bought any renewables in the IID balancing authority.

18 I was pleased to hear Mr. Avery worrying about
19 the solar peak, but he didn't buy any geothermal.

20 Okay. So, you know, if the peak is a problem,
21 then let's buy some of that base load and ship over, as
22 we talked about when we fit the Imperial Sunrise.

23 Path 42 is a vital piece of infrastructure that
24 will relieve problems in a number of ways. But if we
25 don't stay on it and pay attention, and connect the

1 dots, then it's not going to get done.

2 But, similarly, we talked about renewable and
3 gas-distributed generation has some extraordinarily
4 valuable technologies available to us, not just solar.

5 But if you talk to people that are trying to do
6 the project about their experiences trying to
7 interconnect as small as a megawatt project, it's a
8 nightmare.

9 We've got one down in Orange County, the Madison
10 system, where the project is \$6 million of state of the
11 art advanced technology using landfill, and the
12 interconnection report came back and it's \$8 million
13 worth of upgrades. It can't be, it just can't be.

14 And if it is, we need to think about modernizing
15 the distribution system to take advantage of this.
16 Guess what we need, we have a base load need in Orange
17 County. Some of this -- not that this is the whole
18 answer, but distributed resources, fuel cells, and
19 solar, and other technologies have the potential to help
20 and we shouldn't be treating them as a red-headed step-
21 child. You know, they should be thought of as valuable
22 assets that are important.

23 And so, as we plan the system, let's plan for
24 all of the resources that can help. And I know that
25 there's a lot of challenges in doing this, but I think

1 it's important that we work harder at it.

2 Another area that we need more talk about, and
3 it's good to have DWP to be here, along with the ISO,
4 and Edison, but we need to get those folks working more
5 closely together.

6 The Edison, and DWP, and ISO cooperation could
7 help us, if we could figure out how to overcome the
8 bureaucratic sovereignty -- I don't want to minimize
9 these because the municipal utilities are very
10 protective, as we know, of their sovereignty. And they
11 don't like to come to San Francisco without a visa, you
12 know, because they might get regulated by the PUC.

13 (Laughter)

14 MR. WHITE: They have very valuable assets which
15 could be arrayed in a manner that would help us and save
16 money, and they could make some money, too. But it
17 requires new kind of relationships than in the past.

18 You know, DWP is never going to join ISO, okay,
19 but they have become a scheduling coordinator recently,
20 and that's progress.

21 And I think your Commissions together can foster
22 high level communication and dialogue between and among
23 those institutions to make better use of the system.

24 The storage was mentioned earlier. There's been
25 some good projects proposed, a Lake Elsinore storage

1 project called LEAPS, but the utilities thought it was
2 too expensive.

3 It seems to me that Mr. Berberich has -- there's
4 more use for storage than simply providing regulation,
5 particularly in the context of the Southern California
6 system.

7 But as Mr. Geeseman suggestion, we have it
8 planned as if we were having to be prepared for things
9 that have not happened.

10 I was sort of astonished when I got briefed by
11 the ISO and I said, well -- and I said why did you close
12 Huntington Beach?

13 And they said, well, the worse case scenario was
14 only one unit, now.

15 Well, we're now beyond the worst case scenario,
16 which suggests that our planning needs to be more
17 robust. Not because we're wanting a certain outcome,
18 but so we're ready for it.

19 And so, lastly, I think if we look at the needs
20 for the local capacity resource, we need to recognize
21 that it isn't -- the most important thing isn't
22 dispatch-ability, there's a lot of other ways to achieve
23 dispatch-ability.

24 The attributes are location and electric
25 characteristics. And non-traditional resources, I hope,

1 can be part of that approach and not only have it be the
2 gas-fired resources that we can turn on.

3 Because one way we might want to have more
4 dispatch-ability is take a look at the amount of self-
5 scheduling that we have grown accustomed to on the
6 system, and see whether or not it's still wise to have
7 that practice when, in fact, we need more flexibility.
8 Not just because of renewables, but because we need more
9 flexibility for its own sake. And our system is less
10 flexible than it needs to be and that it can be.

11 I thank you for your attention and I appreciate
12 the opportunity to be here and will be happy to answer
13 any questions that you have.

14 COMMISSIONER PETERMAN: Thank you, Mr. White.
15 And regarding your initial comment about the importance
16 of collaboration between the agencies, for those of you
17 who weren't here this morning I'll just mention, again,
18 that Public Utilities Commissioner Simon had a strong
19 interest and intending to attend this workshop, but due
20 to consideration, really it's Open Meeting Act, with
21 multiple commissioners from their commission, he is not
22 here, but he is interested in getting the report back.

23 Ms. Inman.

24 MS. INMAN: Thank you. I don't know if I'm on,
25 yet. Is this on? We're good to go.

1 Fran Inman, Majestic Realty. And, first of all,
2 I was the former chair of the L.A. Chamber. Welcome to
3 all of you to Los Angeles, we're delighted to have you
4 all here today and hope that we can do more of this.

5 Because as Barry mentioned, in the South Coast
6 District we have 17 million folks, so I think it is
7 important and it's complicated. I know all the work you
8 all do is complicated, but I would suggest that our
9 region might be even a little more complicated.

10 And then, also, as a member of the California
11 Transportation Commission, I'd like to welcome you to
12 the Caltrans building. So, I thought that was very
13 appropriate that you all were coming here today.

14 And in that regard I would be the first to
15 announce that energy is not my field of expertise.
16 CHP, in my lingo, means something very difficult.

17 (Laughter)

18 MS. INMAN: So, I've tried to take copious notes
19 today, but I will have to go back and make a few calls
20 to Chairman Weisenmiller and say what -- what does that
21 mean, again, help me out here.

22 But, anyway, delighted that you're all coming
23 together and we're all coming together because I think
24 it really, really is important for us to get it right.

25 I'm not speaking on behalf of the California

1 Transportation Commission, but I would be remiss if I
2 didn't point out our recent needs assessment, which we
3 looked at a ten-year planning horizon that I think is
4 even a short time frame for infrastructure planning for
5 transportation.

6 But with that we discovered that we were some
7 \$30 billion a year short of being able to take care of
8 what we already have and to meet our needs.

9 So, on an ongoing basis --

10 CPUC COMMISSIONER FLORIO: Is that \$30 billion?

11 MS. INMAN: \$30 billion, with a "b", yeah.

12 COMMISSIONER PETERMAN: I can believe it.

13 MS. INMAN: And, you know, we have been
14 copiously watching what happens in Washington lately,
15 don't hold a lot of hope that we will see a
16 transportation bill that really recognizes the
17 importance in the investment in the transportation
18 infrastructure.

19 As Barry mentioned earlier, particularly
20 important in this region, to our State and to our region
21 is the goods supply chain and the great issues that we
22 all try to figure out the solutions.

23 And the needs assessment, in our SCAGs, Southern
24 California Region, when we did our regional
25 transportation plan, recently, we learned that 76

1 percent of our funding comes from local sources, which
2 means that our self-help counties, we have 19 of those
3 across the State of California.

4 And within our SCAG region, only 11 percent of
5 our funding today comes from the Federal government, and
6 76 percent from our local sources, and the rest from our
7 State.

8 That said, we're running to the end of our 1
9 Billion dollars on the transportation side. So, I think
10 it's important for all of us that whatever we do
11 collectively is integrated and works sufficiently for
12 all of us.

13 In terms of goods movement, I'm just fascinated
14 by all of the discussions. We've been desperately
15 working to green our supply chain. We're already,
16 probably, the cleanest ports in the nation, but we're
17 continuing. And as Barry pointed out, with our air
18 issues, we have to continue to improve ourselves.

19 I think it is going to be very, very important
20 that we get all the stakeholders to the table.

21 What hasn't been mentioned today at all was
22 litigation, and I think that's a huge issue for all of
23 us to acknowledge that it has become a way of life for
24 us.

25 I think the more of these forums we can have to

1 bring stakeholders together and kind of collectively
2 work for the balance in the solution, hopefully, it will
3 allow us to solve some of these complicated issues
4 without having everything being decided in the courts.

5 Long term, I don't think that will give us all
6 in the 21st Century that we all envisioned.

7 I think that as we look on the transportation,
8 with the implementation of SB 375 and our companion
9 bill, which is SB 391 on the transportation side, which
10 requires all of us, in our sustainable community
11 planning, to really take a look and, clearly, energy is
12 an integral part of how we all build sustainable
13 communities.

14 So, I think it is important to us to have these
15 very crucial discussions.

16 But it's going to be important to get it right.
17 I think the questions about the rates and who pays, I
18 don't see access funds on any horizon, so I think it's
19 going to be very, very important for us to work to not
20 have too many stranded assets.

21 And I don't think that we need to let perfect be
22 an enemy of the good, too. I think we could all be
23 looking at ourselves, and we often get criticized for
24 having the same conversations that we all had 10, or 20,
25 or 30 years ago. So, I think it is important to keep

1 going.

2 The things that I've learned today, the future
3 is difficult to forecast. Chairman Weisenmiller started
4 with that, I think we've heard it over and over again.

5 The one in ten filing that gets referred to
6 often relates to me as a commercial real estate
7 developer in my day job, thinking of the hundred-year
8 flood planning we would do. We would be doing 30-year
9 flood planning instead.

10 So, I think there's more and more need for us to
11 try to be as comprehensive as we possibly can. I think
12 there are lots of stakeholders and no one agency in
13 charge is a challenge for all of us.

14 Because in that regard it's easy to stop things
15 and it's very, very difficult to get things done. And
16 we see that over and over again, it's not just in the
17 energy sector, but it is important for us.

18 I think that it was interesting to me, the
19 discussions around the short-term challenges that
20 obviously San Onofre has accelerated some of these
21 discussions.

22 But even so, given the needs that we have, the
23 planning horizons I feel are quite brief. I realize we
24 have immediate things we need to do, but even on the
25 longer term I think we're going to have to look a

1 little, a little further out. There are lots of
2 externalities involved in everything that we all do.

3 Timing is an issue I think with that. And
4 understanding that not all of the components are equal
5 and I think it's important, and I think the public
6 doesn't understand that, certainly.

7 Many of you whose life work has been in this
8 field would even have debates on some of these
9 discussions as we're hearing today.

10 But I think it really, really is important to
11 get that message out that it's not as simple as
12 substituting X for Y, there are unintended consequences
13 from doing that.

14 So, from a business perspective I would say my
15 colleagues in business would probably be very frightened
16 to be here today to -- if you're looking at economic
17 development, if you had a prospective tenant that was
18 coming to your region, I'd just as soon have them think
19 that we have this all figured out and the sun always
20 shines in California.

21 So, let's hope that we can all roll up our
22 sleeves and come together. You know, from a business
23 perspective we need certainty of reliability on the
24 goods movement side. Clearly, we're interested in
25 philosophy and through-put.

1 So, once again, happy to be here and thank you.

2 MS. JOHNSON MESZAROS: Good afternoon.

3 COMMISSIONER PETERMAN: Welcome.

4 MS. JOHNSON MESZAROS: I'm Angela Johnson
5 Meszaros and I am going to try to keep my comments brief
6 and direct. And I'm hoping that at some point there
7 will be time for an actual, you know, exchange, instead
8 of some people talking and other people listening.

9 So, I wanted -- I want to reflect a little bit
10 on what we've heard today. And I think that where we
11 are -- let me back up so I can put my comments in a
12 little bit of perspective.

13 I am one of those people who have been
14 litigating all of these issues, right. I am the person
15 that -- I am the person that people obliquely refer to
16 when they say little things, you know, during the
17 context of this conversation.

18 And with that context I want to say I think that
19 where -- the message we keep hearing today and what this
20 all turns on is this question of planning and the
21 failure to do so adequately and robustly.

22 And I think that we've heard in everyone's
23 comments is another way of saying that exact thing.

24 And in the context of doing that planning I
25 think that there's some big questions and there's some

1 little questions.

2 On the big question side I just want to make
3 sure that we think about the fact that there are these
4 higher level issues that we need to figure out how we're
5 going to address.

6 And the question is where do we have the
7 conversation and where do we make the decisions about
8 how we're going to balance the risks, the harms, and the
9 benefits of our energy infrastructure? How are we going
10 to balance these things?

11 What I hear today are people who are making
12 decisions about what are going to be the range of
13 options that are going to be considered, what kind of
14 constraints we're going to acknowledge or not
15 acknowledge, how much transparency there's going to be
16 in the assumptions and what those assumptions are.

17 And that stuff essentially gets cooked into the
18 system such that by the time it comes flying out of
19 somebody's agency we've already started a dynamic that's
20 about pushback, it's about redirection, it's about
21 defense, and it's setting us for conversation that is
22 not conducive to our getting to our collective goal.

23 We need to have energy. We need to have energy
24 that's efficient. We need to have energy that's
25 accessible. We need to have energy that's affordable.

1 We need to know that when we flip on the light switch,
2 the lights are going to come on.

3 And it's a complex conversation to have, no
4 doubt. But certainly the notion that by not being
5 explicit and transparent about our assumptions, how they
6 were reached, who reached them and why they were reached
7 is not going to be something that's going to be helpful.

8 The second thing I want to note is that my
9 grandmother was, in many ways, a very fascinating
10 person. And I could go on about that, but I think it's
11 probably inappropriate here and now.

12 But I will say that one of the things that she
13 used to say to us is just doing anything is not the same
14 thing as doing something.

15 And I fear that our energy planning has come to
16 this place where we're constantly reacting to things we
17 never thought would happen, although everybody knew it
18 would kind of happen, instead of having an affirmative
19 plan with a vision and a goal.

20 And once you've constructed an affirmative plan,
21 with a vision and a goal, and you're going to have to
22 start at the highest levels to get by on because the
23 devil's always in the details. But having those
24 conversations, having visions, having clear goals,
25 that's when you have the space to start asking various

1 different stakeholders to make tradeoffs.

2 If we're in a world where all of a sudden your
3 interest is something we're going to have to set aside
4 because there's a short-term and we really have to
5 discuss it right now. I know you've got a big issue,
6 but we can't really do it right now. Then you're
7 setting up a dynamic, again, that's just fraught with
8 peril and it's setting us up for failure.

9 What we need to be able to have is a vision and
10 a plan so when you come to a community that you're
11 asking to host a facility, you can explain why, why it's
12 there, how it fits into a bigger picture, what it means
13 for the broader horizon, what it means for people's
14 communities more broadly.

15 And then someone can say, okay, we're going to
16 host a transmission line, but we understand that that's
17 going to set us up for having these renewables here or
18 there.

19 We can say we need to have fossil fuel as part
20 of our energy infrastructure and we'll do that, but
21 these are the cleanest, they're the best, they're the
22 most high quality. And we took some old, dirty stuff
23 offline, and we can show you where it is, and we can
24 show it's not emitting, and we can show you how we're
25 addressing it, we can show you how this is all

1 happening.

2 You can't ask people to make tradeoffs. You
3 can't ask people to agree to decisions that they have
4 not played a role in making and do not apparently meet
5 their needs. It just not is going to work out.

6 The other thing I want to do is just take a
7 couple of minutes to talk about the issue of offsets
8 because that's really the work that I've been doing in
9 this energy picture.

10 I want to remind us that offsets are not just a
11 hindrance to where it is we're trying to get to with our
12 energy infrastructure. Offsets are nothing more than an
13 embodiment of the air quality. An offset is the
14 acknowledgement that you've reduced pollution someplace
15 else in order to allow the new pollution you're allowed
16 to permit.

17 And in the South Coast Air Basin, which Dr.
18 Wallerstein made very clear, we've got very serious air
19 quality challenges and we have to recognize and
20 acknowledge those air quality challenges. They are,
21 it's a euphemism for people who are dying from breathing
22 the air, people who are sick, and people who are unable
23 to go to work, and children having asthma attacks
24 because of our air quality.

25 These euphemisms that we're talking about when

1 we talk about offsets are real people's lives. And the
2 notion that we can just talk generally around the issue
3 and not come to grips with the fact that we
4 fundamentally have to change the way that we make and
5 use energy here, in the South Coast Basin, and across
6 the country is something that is going to -- not dealing
7 with that issue directly is something that is always
8 going to be a point of friction.

9 And there are people who need to be involved in
10 these conversations, and these conversations need to be
11 clear, and we need to be clear about the tradeoffs that
12 we're making.

13 So, while I applaud the once-through cooling
14 people who were able to get the power plants to go
15 offline in order to save having hot water dumped into
16 the ocean, which I'm sure is important and I don't mean
17 to minimize.

18 COMMISSIONER PETERMAN: You betcha it is.

19 MS. JOHNSON MESZAROS: Yeah, the notion that now
20 we're in a playing scenario where we've got to get
21 through all the once-through cooling and we'll just
22 budget on the air quality stuff is something that
23 ultimately is not going to be very satisfying.

24 And in the long term it's not -- that can't
25 possibly work for us. We can't have thousands of people

1 dying because they breathe. It's just not something we
2 can do. The public health epidemic that's caused by air
3 pollution is too severe for us to not deal with these
4 issues correctly and directly.

5 The last thing I'll say is while I know that
6 it's ultimately your responsibility in some sense to
7 make these decisions and to help us to plan for our
8 energy infrastructure and energy future, I would urge
9 you to remember and to consider, and to really think
10 about the fact that we are all part of the same
11 community.

12 We all, collectively, have the responsibility,
13 the obligation, and the opportunity to think about what
14 our energy infrastructure's going to look like here, in
15 California.

16 We talk about California setting a path for the
17 rest of the country. Part of the issue is we have to
18 because our air quality's worse than pretty much
19 anyplace else in the country.

20 But given that goal, given the challenges, and
21 the benefits, and what it means to be in California on
22 lots of different levels I call and ask to think about
23 how do we build a community of interested, engaged,
24 impacted, smart people to think really in a thoughtful
25 way about how we're going to deal with those issues.

1 And I hope that as we go forward that you'll
2 remember to call on people like me, and other community
3 members, and representatives to be actively engaged with
4 this issue. Thank you.

5 COMMISSIONER PETERMAN: Thank you for your
6 comments. And also, I appreciate that you're bringing a
7 perspective and some overarching comments that we had
8 not heard as much today or in some of our forums.
9 Partly because, as you noted, there are so many
10 technical issues to work through, but we still cannot
11 forget about including all the decision makers or all
12 those affected in the decision-making process.

13 And I'll just speak to the fact, quickly, that
14 we do have many forums in which the public can
15 participate with respect to these issues, but it's not
16 that easy to participate in, and it's a language. And
17 that's something that we're struggling with, that we're
18 dealing with a very complicated topic that requires a
19 certain threshold of knowledge and how do we engage
20 everyone when, frankly, we don't have enough time even
21 to address all the challenges we want to.

22 But all your points I've taken to heart and we
23 will continue to try to improve that interaction. And I
24 look forward to speaking with you more about how we go
25 about doing that.

1 But thank you for participating on the panel and
2 the comments that you provided.

3 MS. JOHNSON MESZAROS: Thank you.

4 MR. SMUTNY-JONES: Thank you very much. I'm Jan
5 Smutny-Jones, I'm the Executive Director of the
6 Independent Energy Producers Association and I represent
7 about 26,000 megawatts of generation that serves
8 California, about 85 percent of delivered renewables, as
9 well as pretty much all the OTC plants you've talked
10 about today. The three plants that are being built to
11 meet Southern California's energy needs, as well as four
12 other gas plants in the north.

13 There's a significant amount of building going
14 on right now, there's probably 10,000 Californian's
15 working right now on both renewable and gas projects in
16 this State to basically meet our energy future.

17 I also served at one time as the Chair of the
18 California ISO, too, so I was very interested in David
19 Freeman's history.

20 I think it's important to kind of look at this
21 from a slightly different perspective because I see this
22 as sort of an ongoing success story. The simple fact of
23 the matter is that the power plants that we're kind of
24 concerned about today were built primarily in the 50's,
25 in agricultural towns, and they burned oil.

1 It's been a little trip down memory lane for me
2 because when I moved here, when I was ten, we moved to
3 Redondo Beach, so I'm familiar with that power plant,
4 and I've body surfed in front of Huntington Beach my
5 entire high school career, and went to Long Beach State.

6 So, these power plants have been an important
7 part of my life.

8 And at that point in time they were burning oil.
9 And about 20 years ago we shifted them to gas, which has
10 had a tremendous impact with respect to, obviously,
11 improving air quality in Southern California.

12 And we're at a point now, in our history, where
13 we can convert these plants or replace them with other
14 technologies, and I think that's really what this
15 discussion is about.

16 The fact of the matter is since 2000 the Energy
17 Commission, alone, has sited 16,000 megawatts of new
18 gas-fired generation and another, I don't know, 6,000
19 megawatts of solar thermal.

20 So, we've definitely added a lot of energy
21 plants in California and there's a general success
22 story.

23 I think the importance of this conference,
24 today, is that this is a unique problem. Okay, the
25 South Coast, and I applaud you for actually trying to

1 take ownership of this because it's been a long time
2 coming.

3 This is a complicated problem. You have 17
4 million people living in a fish bowl. It is the most
5 polluted place on the planet.

6 Parenthetically, a very small piece of the air
7 emissions that we're talking about actually come from
8 power plants, okay. The vast majority comes from the
9 transportation sector. And if we're going to fix the
10 problem, we're going to have to electrify the
11 transportation sector.

12 So, this is all interrelated and so I think it's
13 very important we have this conversation.

14 One of the key -- a couple just key, preliminary
15 points and one is I don't think people understand sort
16 of the challenges that -- you know, we just use these
17 words sort of generally that we need energy.

18 We have a minimum load condition of about 15,000
19 megawatts statewide. What I mean by that is on a nice,
20 April morning when everybody's sound asleep there's
21 about 15,000 megawatts of stuff turning. At peak it's
22 60,000 megawatts.

23 Okay, so there's about 45,000 megawatts of stuff
24 that we have to figure out when it's coming online,
25 where it's coming online.

1 And as we transform our system it creates a
2 significant number of interesting challenges and that's
3 really kind of where we are right now.

4 The fact of the matter is I think -- my concern
5 is that we're almost out of time in terms of addressing
6 this issue here. And I don't mean this in terms of the
7 sky is falling, but it's very important that this kind
8 of discussion continue, that we have timely, purposeful
9 action that I think engages the public, as I think you
10 just heard.

11 I think it's very important because, otherwise,
12 we're going to have some significant problems.

13 The success stories that we're talking about
14 today, which is El Segundo, Walnut and Sentinel, were
15 all the results of a 2006 RFO that Edison determined it
16 needed new power plants. And it did and still does.

17 It got caught up in a whole bunch of litigation,
18 you know, and we don't need to revisit all that. But
19 the point is that they are just now under construction.

20 So, you know, that's the history. I think
21 that's reality. That's just not me, you know, being
22 Cassandra on the beach and screaming about something,
23 this is real, this happened.

24 I don't know what's going to happen next. We
25 heard a city councilman for Redondo Beach, earlier

1 today, who I assume will take exception if AES decides
2 to repower their power plant, with doing that.

3 And, you know, the point is if we're going to
4 try to get to that 2020-2021 time frame, we need to get
5 on this right now.

6 So the key is, I think, identifying locational
7 needs and I think what will come out of that, also, is
8 identifying flexibility requirements.

9 I want to hit that point because I was taken by
10 the comments of the AQMD because I think there's a
11 misconception about what's going on. People aren't
12 willy-nilly picking the South Coast Air Management
13 District as a cool place to build a power plant.

14 (Laughter)

15 MR. SMUTNY-JONES: Okay. This is really not
16 what we would call a user-friendly environment out here.
17 The reality is that there is a process, and it's not the
18 old process, and thank God for it.

19 Okay, and what the process is, is the ISO does
20 go through a very sophisticated analysis of what local
21 reliability needs are. Okay, and then that's put out
22 there with the utilities, the utilities put those out to
23 bid. There is a process where the California Public
24 Utilities Commission approves those contracts.

25 And every case that I'm aware of basically ties

1 it back to the fact that it's needed to serve a local
2 reliability reason.

3 It then goes to, or maybe concurrently, to the
4 Energy Commission, where the Energy Commission's job is
5 to look at the fact that it basically complies with the
6 CEQA and the various important regulatory issues that we
7 have here, in California.

8 So to argue that we don't have some sort of
9 needs assessment or we're just doing this willy-nilly is
10 just incorrect.

11 So, you know, I think we're well on our way.
12 You need to stay focused on this.

13 I think Mr. -- Les indicated, earlier, that this
14 existing problem, we have about 10,000 to 12,000
15 megawatts of relatively new power plants, I'm talking
16 within the last ten years, that are under contract.

17 As they fall off contract it creates a problem
18 because the energy-only market, and I know I'm getting
19 into some details and I don't want to lose everybody,
20 but doesn't pay for any sort of future fixed-costs
21 recovery.

22 It is an issue that needs to be addressed, to be
23 addressed with the PUC but, you know, it's an issue
24 that's there. Because otherwise you start running into
25 problems where you have what are otherwise perfectly

1 good power plants, falling offline because there's no
2 economic way of sustaining them in an energy-only
3 market. So, we'll leave that at that.

4 So, I also think it's important, we talked a
5 little bit about integration. I think it's very
6 important to start setting pricing out there as if --
7 you know, if integration's a problem, it ought to have a
8 price associated with it. And I don't mean after the
9 fact, which it seems to be. There's some folks
10 struggling with that right now.

11 So, if an intermittent resource right now tries
12 to put a bid out there that has, say, storage with it or
13 some sort of other backup, they're priced out of the
14 market, and that's crazy.

15 So, we ought to be encouraging that, we ought to
16 be encouraging more base load renewables to the extent
17 that that's required and figuring out a way for demand
18 management and storage. Okay.

19 And I'm not -- you know, my issue with demand
20 management and demand response is as long as it's real,
21 it's verifiable, then it ought to be compensated.

22 But back in, you know, 12 years ago, so I don't
23 want to say this is current, but when I chaired the ISO
24 I used to spend a lot of time with the operators, and
25 they only got 50 percent of what they asked for. And if

1 that's the same, then we need to do better on that.

2 So at any rate, in closing here I wanted to
3 basically say this is not a zero sum game. And I think
4 all too often in our discussions about energy it's just,
5 you know, we're just going to do rooftop solar, or we're
6 just going to do this, or we're just going to do that.

7 That's not it. If we're not managing this as a
8 portfolio, we're going to fail. And so there's a number
9 of issues here. Obviously, the issue with SONGS has
10 thrown -- yeah, some issues out there with respect that
11 I don't think people saw coming.

12 But if we're going to meet our long-term needs,
13 which includes the electrification of our transportation
14 sector, we need to focus on that.

15 So, I basically think that we have made progress
16 over the years. And I think the fundamental issue for
17 you, as regulators, is obviously trying to balance
18 reliability with environmentally responsible generation,
19 and cost. And that's a difficult balance to make and
20 it's a particularly difficult balance to make in a
21 place, like the South Coast, where you have all these
22 things pushing against it.

23 So, good luck with that. And on behalf of my
24 members, we're more than happy to build all you want.

25 (Laughter)

1 COMMISSIONER PETERMAN: Thank you.

2 We're going to turn one second to everyone on
3 the dais to see if they have questions for the panel.
4 But I need everyone to know what needs to happen in the
5 next 15 minutes.

6 We have a firm stop at five o'clock. I,
7 personally, went to go talk to security about this,
8 again, but it really is firm.

9 CPUC COMMISSIONER SANDOVAL: Yeah, we can't
10 afford to keep the building open.

11 COMMISSIONER PETERMAN: So, we've heard it from
12 the Commissioner here, we can't afford to keep the
13 building open, times are tough. So, that is a security
14 concern.

15 So that means that we're going to -- after we
16 hear questions from the dais I'm going to start going
17 through the public comment. I'm putting those who have
18 not spoken, first.

19 I'll ask you to keep your comments succinct and
20 not repetitive.

21 We will be having an IEPR workshop on which this
22 topic is included. They'll cover all the topics we have
23 in the IEPR, and that will be later this year. That
24 format will allow for much more comment on the document.
25 And we will specifically build into the schedule more

1 time for public comment, because I do appreciate that's
2 valuable.

3 So, sorry in advance, there's just too much to
4 cover today. And we thank you for your involvement.

5 And we also would accept, of course, written comments.

6 So with that, let me turn to Commissioner
7 Florio.

8 CPUC COMMISSIONER FLORIO: Yes, unfortunately,
9 I've got to go right now to catch a plane, so my heart
10 stops a little earlier.

11 I truly appreciate everything we've heard today.
12 This last panel was terrific, you were all articulate,
13 and succinct, and quite forceful, and it was all heard
14 and taken to heart.

15 I kind of view today as the first day of our
16 hearings in the long-term procurement proceeding. As
17 Nathaniel said, those will be coming up in August.
18 We're going to be grappling with all these issues, with
19 help from the ISO and the CEC.

20 And all I could say is, if you can, come
21 participate, help us out. We've got a big job to do and
22 we can't shrink from it. The challenges are great.

23 And now I'm going to take a plane back to
24 Northern California, which looks awfully good after all
25 we've heard about today. So, thank you everyone, and

1 appreciate it.

2 COMMISSIONER PETERMAN: Other questions?

3 CPUC COMMISSIONER SANDOVAL: Thank you very much
4 for your comments, really appreciate it.

5 One of the things I think I heard from all of
6 you, Mr. Smutny-Jones talked about the need to manage
7 energy as a portfolio, but also the need to make sure
8 that our assumptions are realistic and not unduly
9 optimistic.

10 People have often described San Onofre as the "N
11 minus 2" scenario, but what at two. That it carried
12 with it not just generation, but huge impact on
13 transmission and voltage.

14 And so, you know, as we talk about things like
15 rooftop solar, distributed generation, which we've been
16 supportive of, we also have to be realistic about its
17 limitations.

18 So, I really hear that from you. And as
19 somebody from Los Angeles, who grew up next to the
20 freeways of Los Angeles, and who has asthma -- you know,
21 Ms. Johnson Meszaros, I really appreciate your work and
22 your emphasis, as well as Ms. Inman. I've worked with
23 the Business, Transportation and Housing Agency, spent a
24 lot of time working on transportation issues, your work
25 in just helping us to realize how this affects

1 Californians and the need to get it right.

2 But I think we really need to check our optimism
3 and, you know, be very pragmatic about what happens when
4 the big resources have an issue.

5 COMMISSION CHAIR WEISENMILLER: Again, I'd like
6 to thank everyone for their participation today. I
7 think we've had a wide range of comments and certainly a
8 lot to think about.

9 I think in terms of going forward, again these
10 issues are hard, you know. And I think when we look at
11 it, the future is uncertain and we have to have
12 strategies that are robust that deal with contingencies.

13 And, unfortunately, in the energy area a lot of
14 things take time. You know, it is probably true that to
15 go from a concept now to completion is -- you know, and
16 even if we had everything lined up right now that we
17 want to do, we're probably lucky if we get it done by
18 2020.

19 And at the same time the world is changing in
20 ways -- certainly, air regulations are changing. But I
21 mean when you look back and try to figure out what
22 forecasts have gone wrong in the past, typically it's
23 been sort of the macro effects. You know, it's been the
24 OPEC price spike, it's been the tax changes, it's been
25 the econ demo, you know, the changes in society, women

1 joining the work force. I mean there's been a whole
2 bunch of things which we never, ever think of.

3 (Lots of audience comment)

4 COMMISSION CHAIR WEISENMILLER: Well, I mean I
5 see -- one of the big studies that was done in the 50s
6 for forecasting, you know, by a national academy, just
7 totally missed that trend. Right? Missed
8 suburbanization of our society and as a part, as a
9 result, they're forecast was just worthless.

10 So, I mean those broader trends in society have
11 to be factored into our thinking, otherwise we're going
12 to get it wrong.

13 COMMISSIONER PETERMAN: Yes, thanks, I'll add my
14 wrap-up comments, now, as well. Thank you to everyone
15 on the panel, as well as those on the dais today.

16 You know, speaking of women joining the
17 workforce, I will note that all of our agencies are
18 hiring right now. And so in terms of being immediately
19 involved in what we're doing in Sacramento, there's a
20 massive turnover in the State due to retirements. You
21 know, as well as with utilities. I mean a significant
22 share, something like 40 percent of the utility workers
23 can retire in the next five years.

24 And the Commission, alone, we'll see a 20
25 percent turnover.

1 And so in terms of really being a part of that
2 process working in the agencies is a really good way to
3 do that. So, I encourage you to go back to your
4 communities and to tell people to get on the State list
5 and to start to apply for these jobs.

6 And we look forward, again, to all of your
7 comments.

8 I'm going to start with the public questions,
9 now, although let me offer the panelists one quick
10 opportunity if anyone has a follow-up comment.

11 All right. So, we're going to start with Morey
12 Wolfson.

13 COMMISSIONER PETERMAN: Thank you. And if you'd
14 like, you can sit here or you cannot, it's your
15 prerogative.

16 And also, by the way, thank you to the staff
17 from the Energy Commission who organized this workshop
18 at a satellite location; tremendous job.

19 MR. WOLFSON: Thank you. My name is Morey
20 Wolfson and I'm a resident of Pasadena. I do not
21 represent an organization here today.

22 I just moved to California after serving in the
23 electric power sector policy arena in Colorado for over
24 40 years. Worked at the Colorado Public Utilities
25 Commission, the National Renewable Energy Laboratory,

1 and served two governors of the State of Colorado as a
2 senior energy policy analyst.

3 But what I want to bring forward to you today is
4 an appreciation for the work that you are doing.
5 California is certainly far ahead of a lot of other
6 states.

7 But there are some areas of urgency which I want
8 to bring forward which are echoing, you know, some of
9 the things that have been said before.

10 First of all, on the question of nuclear power
11 I, like many of you, have been watching this for many,
12 many years. I think it's time for us to get far more
13 real, and conclusive, and decisive about the question of
14 nuclear power.

15 And that there are facts about nuclear power
16 that we've all known for a very long time and it never
17 would have happened without the massive intervention of
18 government.

19 And it is totally uneconomic and I encourage you
20 to do everything within your limited power, which I
21 recognize that limit is there, to not bank on the
22 restart of the San Onofre Nuclear Generating Station.

23 I also encourage you not to bank on the
24 continued operation of the Diablo Canyon.

25 You, in California, have a good history here of

1 putting these nuclear reactors offline, Humboldt Bay,
2 Sacramento Municipal Utility District.

3 And I think that for, you know, planning
4 purposes, yes, I know it's keep everything on the table
5 and have all these different scenarios, but let's really
6 get real about nuclear power.

7 The last thing, in the interest of time I want
8 to mention, it's been said, you know, tell me something
9 that I don't know. And I think this panel knows a lot.

10 What I think that you may not be aware of is
11 that when we talk about energy storage, we're not just
12 talking about small things that can happen or a five-
13 megawatt battery somewhere next to a transmission line.

14 When you have intermittent wind, when it is not
15 delivering power during the time that you really need
16 it, that's screaming for storage and the way you might
17 get to the storage would be to think through the idea of
18 electrolyzing water in city-sized fuel cells. Okay.
19 So, you'd use those wind electrolytes --

20 COMMISSIONER PETERMAN: Morey, I'm going to have
21 you actually wrap up. We have done a couple of
22 workshops on storage. I'm also happy to talk more about
23 that with you.

24 MR. WOLFSON: Okay, thank you.

25 COMMISSIONER PETERMAN: Thank you. Next, we're

1 going to hear from Donna Gilmore. I've got five cards
2 in five minutes, so we're really going to keep it.

3 MS. GILMORE: Well, I speak earlier.

4 COMMISSIONER PETERMAN: Okay, you got a minute
5 and 20, thanks to Donna Gilmore.

6 Next, we'll hear from Harvey Eder, please.
7 Welcome. Welcome, sir.

8 MR. EDER: Hi, I'm Harvey Eder, I'm with the
9 Public Solar Power Coalition. I think that there should
10 be a statewide energy agency to convert the solar, and
11 to do it in ten years.

12 I was with a group in Sacramento, a few weeks
13 ago, that represented 17 environmental groups working on
14 fracking, that are going to look at an initiative in two
15 years.

16 The State of Alaska has a 25 percent energy tax,
17 surtax, and we don't have anything like that. We should
18 have like a 50 percent surtax and use that to convert to
19 solar.

20 There's CCAs, Community Choice Aggregation, is
21 one type of solar power that's implemented here, in the
22 State. If the State buys out the transmission and
23 distribution lines they won't have the guff coming from
24 the investor-owned utilities and the heartbreak of
25 trying to implement something; like PG&E fought like

1 hell a few years.

2 I have a lot more that I'd like to say but I can
3 come up if there's another minute after somebody else
4 gets to talk.

5 COMMISSIONER PETERMAN: Thank you, sir, for your
6 comment. And we also, truly, will take written comments
7 and we have another workshop which will be in September,
8 I believe.

9 And can you put up the slide with how to file
10 comments and everything like that, while we're talking?

11 Al Sahler?

12 MR. SAHLER: Already spoke, I'll pass.

13 COMMISSIONER PETERMAN: Okay, thanks to you,
14 sir.

15 Rochelle Becker?

16 MR. BECKER: Let it go.

17 COMMISSIONER PETERMAN: Okay, Ben Davis?

18 All right, any -- sir, then come on, you can
19 have 30 more seconds.

20 MR. EDER: Okay. The CCA law was passed at the
21 same time Enron was gaming the State and that's why it
22 went through.

23 PG&E went bankrupt, Southern California Edison
24 was days from going bankrupt.

25 We should look at CHP as much more efficient in

1 terms of solar, it's from maybe 30 to 90 percent
2 efficient, versus photovoltaics are about from 10, to
3 30, 25 percent efficient.

4 And you could use air conditioning with
5 absorption chillers.

6 And let's see here --

7 COMMISSIONER PETERMAN: All right, sir, I'm
8 going to ask you to --

9 MR. EDER: Okay. All right, thank you.

10 COMMISSIONER PETERMAN: We have a woman behind
11 you who has not spoken, yet.

12 MR. EDER: Okay.

13 MS. GEORGE: Yeah, I did speak this morning,
14 thank you for a chance to say one more thing. I did
15 want to say that I'm in the long-term procurement
16 proceeding. There's no short-term procurement
17 proceeding.

18 Basically, I have asked every agency for an
19 opportunity to have public input into this process. And
20 in my whole work in the long-term procurement proceeding
21 last year I proposed for, just in case nuclear plants
22 went down, we should have an expedited planning process
23 so that if summer comes and we are in trouble, we would
24 have input from everybody, including the public.

25 I have to say that the plan for replacing San

1 Onofre has been crafted in the back room, there has been
2 no public input opportunity that I know of, and I'm
3 pretty good at finding these things.

4 So, I appreciate you saying that there's a
5 workshop in September, but that's after the summer's
6 heat has already, you know, gone on for a couple, two,
7 three months.

8 And I think that some of the other panelists
9 said this, too, that there really needs to be a
10 comprehensive look and you're not going to get that
11 unless you have public input.

12 Stakeholders are fine, they're important, but
13 the public has another voice here that needs to be
14 heard.

15 COMMISSIONER PETERMAN: Thank you. And your
16 comment is a good tee up for what I want to leave as the
17 final comment here, which is this workshop is a part of
18 the Integrated Energy Policy Report process. We are
19 mandated at the Energy Commission, by the Warren-Alquist
20 Act, to look at the state of energy every year, and
21 there's a big report that's put out every two years.

22 Last year, on the 2011 IEPR, which was one of
23 those big report years, we put out a 330-page report on
24 challenges related to renewables.

25 A lot of the questions that were asked here,

1 today, you can find answers to in that report. I think
2 that report lays out well, really, some of the
3 challenges that we're facing as a State.

4 What we're doing as a part of this year's IEPR
5 process is providing those detailed recommendations,
6 those action items that we need to address those
7 challenges.

8 If you're looking to engage, to understand the
9 technical issues that we're talking about, read those
10 reports. We prepare them for you.

11 And so my request of all of you is to actually
12 consume those reports. Those reports are available to
13 the public, they're meant as direction for other
14 agencies, and for the Legislature.

15 So, that's what we're hoping this year that the
16 actions and recommendations we suggest will really be
17 followed upon.

18 And the workshop that I referred to in
19 September, that's the IEPR workshop. And we have had,
20 in any given year, I think one year there were 60 public
21 workshops for the IEPR. My goal this year was to keep
22 it shorter and I think we got to ten.

23 But that's a forum where you can provide your
24 input, we do read it, and we put it into this document.
25 It's meant to be a living document and it's only as good

1 as those who use it.

2 So, with that, thank you for your comments, and

3 we look forward to you reading the report, you

4 commenting on it and participating in our next workshop.

5 Have a good evening.

6 (Thereupon, the Workshop was adjourned

7 at 4:58 p.m.)

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